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STRENGTH FROM EATING

HOW AND WHAT TO EAT AND DRINK .·. TO .·. DEVELOP .·. THE HIGHEST DEGREE OF HEALTH AND STRENGTH. .·. .·. .·. .·.

BY

BERNARR MACFADDEN

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The beauty and glory of superb physical health are within the reach of all who are willing to strive for such glorious rewaras.

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Man is what foods make him.

Eat to enjoy, not merely to fill your stomach.

"Tell me what you eat, and I will tell you what you are."—Prof. L. H Anderson.

Some "Eat to live"; others "Live to eat," but if you so live that the highest and most intense enjoyment can be secured from eating that superb health which at times thrills every nerve with surplus power will be your ever-present possession.

CONTENTS.

PAGE.

CHAPTER I.
Appetite 10

CHAPTER II.
Mastication 22

CHAPTER III.
Process of Digestion 33

CHAPTER IV.
Air 39

CHAPTER V.
Water 46

CHAPTER VI.
Overeating 51

CHAPTER VII.
Three-Meal Plan 62

CHAPTER VIII.
Two-Meal Plan 66

CHAPTER IX.
One-Meal Plan 70

CHAPTER X.
Meat, or Mixed Diet 73

CHAPTER XI.
Vegetables 78

CHAPTER XII.
Raw Diet 82

CHAPTER XIII.
Cooking of Foods 89

CHAPTER XIV.
Health Foods 94

CHAPTER XV.
Food and Occupation 98

CHAPTER XVI.
Food and Temperature 104

PAGE.

CHAPTER XVII.
Alcoholic Liquors 108

CHAPTER XVIII.
Drinking at Meals 119

CHAPTER XIX.
Ice Water 122

CHAPTER XX.
Coffee and Tea 123

CHAPTER XXI.
The White-Bread Curse 133

CHAPTER XXII.
Elements of Foods 144

CHAPTER XXIII.
Muscle-Making Elements 147

CHAPTER XXIV.
Fattening Elements 152

CHAPTER XXV.
Mineral Elements 154

CHAPTER XXVI.
Wheat and Wheat Preparations 158

CHAPTER XXVII.
Oats and Other Grains 161

CHAPTER XXVIII.
Vegetables 166

CHAPTER XXIX.
Dairy Products 172

CHAPTER XXX.
Fruits, Berries, etc 176

CHAPTER XXXI.
Meats 182

CHAPTER XXXII.
Nuts 186

CHAPTER XXXIII.
Fish 191

Bernarr Macfadden

PREFACE.

Strength! How we all yearn for this grand power!

No matter how much strength may be possessed one always desires more. It is like money. You can never secure enough. No matter what may be your desires or ambitions; no matter what may be your occupation, strength is an actual necessity in order to accomplish anything of value in life.

From as far back as history dates the tendency of humanity to worship strength is noted. This inclination has not decreased to any extent even to-day. We all love and admire strength. Our heroes are all strong. We like to imagine them with all the vigor and beauty of body which every perfect human being should possess.

The normal condition of every human body is one of strength. Every infant which has vitality enough to be born and live, has sufficient vitality to grow into a vigorous man or woman. Where it is otherwise, the weakness and disease have been caused by unnatural conditions. In every case weakness is brought about by failing to observe the laws of nature, which demand the use of every part of the muscular organism, and a regular supply of nourishing foods.

Though the building of any great degree of strength is impossible without using it regularly as acquired, the influence of diet is very great. It requires but little intelligence for one to understand how greatly foods can influence the condition of the body. In order to build strength you must have strengthening and nourishing foods, and these foods must be eaten as nature demands; otherwise there is but little possibility of one gaining the desired physical power and beauty.

Reader, have you sufficient strength? Have

you all the beauty and vigor of body that you desire? If not, it is plainly and clearly within your reach. It is simply required of you that you make determined efforts to bring about this natural condition of the body.

I have endeavored in this book to teach some plain truths: I have endeavored to emphasize with all possible accuracy the plain laws of nature in reference to eating and drinking, for the attainment of the highest degree of health and strength.

Read and form your own conclusions.

Strength can be yours.

Let your determination be strong, and your perseverance unabating, and the suppleness beauty and buoyancy of strength will appear as your reward in every instance.

Yours for Health
Bernarr Macfadden

CHAPTER I.

APPETITE.

The Puritanical theory that all pleasures were evil in character, has probably done much to assist the human race towards the "mire" of physical degeneracy. There is no natural pleasure, or natural appetite, or natural desire that was not created for a particular health-giving purpose, the following of which will add strength to the body; and the sin, the evil, lies not in commission but in omission. Cultivate Nature, natural appetites, natural desires; develop that delicacy of intuition which will enable you to interpret and follow their dictates as nearly as it lies in your power, and you will be a stronger and nobler specimen of manhood or womanhood because of this.

"Taste has been considered the lowest, in usefulness, of all the senses. On the contrary, if properly understood, taste is the most important of all the faculties man possesses. Upon

an examination, that anyone can make for himself, it is revealed that taste is the faithful sentinel of the stomach, of the tissues and of the brain, whose guidance and warning, if heeded, will give hertofore unknown enjoyment to eating, and at the same time insure perfect health and the maximum of strength." —*Horace Fletcher.*

How many human beings eat their meals because it is meal time! They have no desire for food, absolutely no appetite, but they feel that it is their duty to eat.

Poor fools!

Duty, indeed! Why, friends, every mouthful of food swallowed without appetite is an outrage committed against the stomach: an outrage so fearful that every organ of the body is dulled and deadened by it. And those very persons who abuse themselves in this way are often the loudest in their condemnations of intemperance-alcoholic intemperance.

If the real facts were known, these sinners against the appetite, against the stomach, are the victims of an intemperance that is far more

destructive in its character than those who indulge in alcoholic liquors.

There are occasions even when an alcohol fiend enjoys an exaltation of spirits which is the semblance of the exhilaration that often comes to those in a high degree of physical health, but the person who performs his "duty" of eating three times per day, "whether he needs it or not," year after year, never, on any occasion, has his pulse quickened by such an influence. Every organ of his body usually loses its acute power of sensation to a similar degree with the stomach. This poor, abused organ is compelled to work against its will continually. Never at any time, under these circumstances, is it prepared to digest the "mess" that is dumped into it. Can you blame this organ for failing in its duty? Can you blame it if the food gives no strength? You may eat and eat, try every conceivable tonic on earth, go from one physician to another searching for a remedy to cure your trouble under such circumstances and your efforts will be of no avail.

If one would use his brains a trifle, and obey the natural instincts of his body, as does the dog and all other lower animals, the stomach would be allowed to rest until it cries out for the privilege of working. Then it is ready to work, to digest. It has all the digestive juices prepared in advance and the food is attacked by these juices immediately upon its entrance to the stomach, and is quickly dissolved, or reduced to that condition necessary for its absorption by the various glands with which it comes in contact during passage through the alimentary canal. The existence of an appetite for food indicates not only that the food is needed by the body, but also that the digestive organs are ready to receive it.

It is the enjoyment of food, "eating with appetite," which makes the salivary glands, and the glands that furnish the gastric and other digestive juices, pour forth their liquids in copious quantities. Under no other circumstances are these digestive liquids, necessary to proper digestion, furnished in the proper quantities or in proper strength. Therefore

any one can clearly see the terrible sin of eating without appetite. The food is washed down into the stomach by coffee and other abominable liquids, and, in a haphazard way, the stomach may try to digest it. But there is no "vim" to its efforts. It is a grim duty performed against protest. Should one wonder that he suffers from indigestion under such circumstances? With all this "mess" of food fermenting, and sometimes actually putrefying in the stomach, how could it be otherwise? And some persons have the incomprehensible audacity to wonder why their breath is foul! When the contents of the stomach are in this condition, the whole system is actually poisoned—not only the breath, but the perspiration and every emanation from the body will have an unpleasant odor This foulness is taken up by the blood in its effort towards elimination—it is therefore distributed everywhere, throughout the entire body, and under such circumstances it is really marvelous how the body can continue to manifest life when

the conditions that create this filth are continued year after year.

Eating without appetite is actually the only cause for the depraved physical condition described above. There can be no other cause. Food cannot lie in the stomach undigested if the stomach is first prepared for it by appetite and the enjoyment that it gives to the process of eating.

Let me emphasize with all possible clearness that in eating for the acquirement of the highest degree of vigorous health, the necessity for obeying the dictates of the appetite must be recognized to the fullest extent.

The appetite is absolutely the only guide as to quantity and character of food needed to nourish the body at different times, and if the delicate sensibility of this guide has been dulled and deadened by failure to acknowledge and follow its dictates, by crowding the stomach with food against the natural inclination just because it is meal time, the only indication that sufficient food has been eaten will be that the stomach can hold no more, and there will be

no natural craving to indicate the particular character of food especially required to nourish the body at that time.

The unperverted appetite always craves most keenly that particular food element that is most needed by the system to nourish the body. Therefore, if the appetite is in a normal condition, the food that tastes the best will be that which is richest in the nourishment mostly needed.

"Taste, in its normal condition, when allowed to direct or advise, craves the kind of nourishment the body needs, invites to eating, gives enjoyment during the whole time needed for the fluids of the mouth to do their part of the assimilating process, ceases when the food is ready for the stomach, and thereafter fails to recognize the indigestible sediment which remains in the mouth after nutriment has been extracted; and, in these services, if consulted and obeyed, prevents indigestible matter from entering the system to burden and clog the lower intestines.

"Appetite and taste are the sense functions

that are most important to health, and hence, are the most important to study and understand. They are the guide in nutrition and the guard of the body.

"Taste is also dependent on supply of the mouth juices, usually called saliva, and these differ materially in individuals, necessitating self-study, self-understanding and self-care to insure prevention of disease. Whatever does not taste, such as glass or stone, is not nutritious. The juices of the mouth have the power to transform anything that excites taste into a substance suitable for the body. If we swallow only the food which excites the sense of taste, and swallow it only after the taste has been extracted from it, removing from the mouth the tasteless residue, complete and easy digestion will be assured and perfect health maintained."—*Horace Fletcher.*

Of course the needs of the body vary greatly at different periods. At one time one might especially crave an article of food that would not be at all appetizing on another occasion. This accounts, in a measure, for one becoming

tired of any special article of food when eaten too frequently. The body is surfeited with the elements of nourishment which it contains, and hence all desire for it disappears. And, again, it will be noticed that those foods, like whole wheat bread, which contains all the elements needed to feed the body in almost perfect proportions, can be eaten with relish at nearly all times when an appetite for anything exists

But the reader may ask, "How am I to know if my appetite is normal or abnormal?" About the only condition that can be depended on absolutely to indicate as to whether or not one is living according to the dictates of the normal appetite, is the enjoyment of that high degree of health which makes every moment in life seem full of joy from the very exuberance of one's own feelings. This condition, one and all will easily admit, is rarely met with today, and it indicates quite clearly the usual abnormal state of civilized human beings.

The question will now naturally arise if the

appetite is abnormal, how can it be made normal?

There is but one way of creating a normal appetite and that is by fasting. One must fast until he has a clear unmistakable craving for food, then the instinct will have no difficulty in selecting those foods most needed, if a choice of wholesome and nutritious foods are given. As to the length of time one should fast in order to bring about these results it will of course depend entirely on the physical condition. If the appetite has been outraged in the usual way, year after year, and no attention has been given to the necessity for physical exercise, it would no doubt take a fast of several weeks to bring about an absolutely normal condition. I am fully aware that there are but few of my readers who would dare attempt a fast of such duration, and, in fact, practically the same results can be achieved without resorting to such extremes, though these results will of course not appear so speedily as they would if a total fast could be endured.

Begin this body-cleansing, appetite-creating process by missing one meal (breakfast) per day.

After having followed this for a while, miss two meals per day, breakfast and the noon meal, or, else, breakfast and the evening meal. This method will enable you to feel your way, step by step. After having gone without breakfast for several days, and the benefits of this have become plainly evident, you will be better prepared for the abstinence required in subsisting on only one meal per day.

The benefits that result from fasting are unquestionably greatly lessened if the confidence in its efficiency is not sufficiently strong, and this graduated process of teaching its advantages can be commended to those who are open to conviction, but who do not feel equal to a prolonged fast.

CHAPTER II.

MASTICATION.

Digestion begins in the mouth. The thorough chewing and mixing of the food with saliva is, consequently, one of the principle and important factors in digestion. All foods in a natural state require a great deal of chewing before they can be swallowed, but the various methods of preparing food, by which it is moistened and softened, usually enables one to swallow it with but little chewing. It therefore behooves us to remember this prime nenecessity for thorough mastication, no matter how soft the food may be. Even soups must be submitted to a certain amount of this chewing process, that the saliva may be thoroughly mixed with it before it is swallowed. Food is not in a fit condition to enter the stomach unless it is first thoroughly masticated and mixed with saliva. The necessity for this is almost universally ignored, and diseases of the diges-

tive organs, both chronic and acute, from which human beings suffer almost universally in civilized countries, is ample evidence of the sins that are being committed against the stomach.

Eating without appetite is unquestionably a serious sin—there can hardly be a greater sin against the digestive organs—but the sin of deficient mastication undoubtedly comes next. In the previous chapter I mentioned the importance of the thorough enjoyment of all food taken into the stomach—how this ability to enjoy every morsel eaten not only aroused the salivary glands to vastly increased activity, but every one of the juices that assist in the mysterious process of digestion were made to flow more freely under those circumstances. Now, food cannot be thoroughly enjoyed if not thoroughly masticated. Thorough mastication is what produces this enjoyment—is what arouses the sense of taste to its highest capacity, and most delicate acuteness. How much enjoyment does one derive from eating when the food is hurriedly bolted? Practically, none.

He is one of the "duty" eaters. He eats because it is meal time, and because he must keep up his strength, and, apparently, is ignorant of the fact that he is not only actually draining his strength, by this crime against his stomach, but is rapidly wearing out the entire internal organism. The digestive organs of such a person are continually overtaxed. They may adapt themselves to the abnormal habits forced upon them, and make no special sign that they are suffering from this abuse, but the time will come when the penalty for this infraction of Nature's plain law will be paid in full.

Nature's laws cannot be broken with impunity. The penalty of violated human laws is often hinged upon the fact of the transgressor being found out, but there is not even this chance of escaping the just punishment demanded from transgressors of the laws of Nature.

Nature demands that you must enjoy your food to the very fullest extent. The pleasure of eating should be so great that it blots out

everything else for the time being. It should literally absorb your entire attention. Every worry in reference to business, or other trouble, should be discarded absolutely from the mind. If you are not able to discard all these interferences with your dietetic enjoyment you are eating without sufficient appetite, and you should immediately cease, and wait for an appetite which will enable you to completely lose all external thoughts in the pleasure of satisfying this natural demand of the body.

Then sit down to feast. Eat very, very slowly. Try to see how much enjoyment you can extract from every mouthful of food. Retain it in the mouth, chewing vigorously all the while, until it is absolutely reduced to a liquid, and until it is swallowed involuntarily. Gladstone's rule of chewing every morsel thirty-two times before swallowing is practically no guide for you. Even the soft foods, like mashed potatoes, for instance, will have to be chewed from thirty to fifty times in order to reduce them completely to a liquid, and to extract all the delicacy of flavor. Dwell on every

morsel of food as long as it is possible to retain it without involuntary swallowing. As the morsel is submitted to the chewing process it gradually grows richer in flavor, more delicious to the taste, and the process should be continued until the maximum of this delicacy of flavor has been reached. Not until then is the food ready to be transferred to the stomach—not until then do you really get the richest, most delicious flavor of what you are eating.

All those who swallow their food previous to this point, not only miss the rarest pleasure of eating, but they swallow before the food is ready for the juices of the stomach to begin acting upon it.

"If we masticate—submit to vigorous jaw action—everything that we take into the mouth, liquid as well as solid, until the nutritive part of it disappears into the stomach through compulsory or involuntary swallowing, and remove from the mouth all fibrous, insoluble and tasteless remainder, we will take

into the body thereby only that which is good for the body.

"If a bloated, pimpled, bilious tramp, sorely afflicted with two or three internal and intestinal diseases which have been declared to be chronic, can be brought to normal weight, purified in complexion, cured of a craving for drink, and put in possession of natural manhood and an energy for work, without use of medicines, but only with attention to mastication, and all within three months, what may not be the possibilities involved."—*Horace Fletcher.*

Hygienists and physicians everywhere commend the mixing of conversation, and of other social diversions with the pleasures of table. If eating and masticating, as suggested here, there is no need for such diversion. In fact, conversation is liable to seriously interfere with the proper mastication of the food, and distract the attention from the pleasures of eating, which should be all absorbing for the time being. Of course, I will admit that the entertainment afforded by pleasant and

agreeable companionship during meal time is a most decided advantage if one is in the habit of eating in the usual rapid manner; for, diversion of this nature compels one to eat more slowly, forces him to linger more over the various dishes, and holds him back from hurrying through the meal by the gorging process, adopted by so many persons when eating alone, with appetite, or merely from a sense of duty. As stated before, the all absorbing pleasure of eating, of gratifying the sense of taste, should command the entire attention during a meal. You should make a business of enjoying this particular pleasure in the greatest possible degree, and if this is done properly there will be no chance for the introduction of "table talk."

It is not absolutely necessary that one eat alone. No objection can be made to companions who do not insist upon diverting the attention from the main object of the moment, but it would be well to remember that, the commendable rule of "doing whatever you may be engaged in with all your powers," ap-

plies to eating quite as forcibly as it does to other habits or pursuits in life.

Much has been said in condemnation of the person who "lives to eat," but the one who really and truly lives so that the greatest possible enjoyment from eating can be secured, will eat practically but one full meal daily, and will dwell on the delectable flavor of every morsel, that this meal may continue from an hour to an hour and a half. The dietetic enjoyment secured by an ordinary everyday Epicure, who eats three meals a day, is as nothing compared to the intensity of that pleasure derived from eating as described. It is like comparing the dulled, transient and intermittent sensations secured from overworked and deadened nerves to those intense emotions aroused in one whose nerves are alive with joy and power of superb physical life.

It would be well, also, to note that the retaining of a normal appetite—of that sense of taste which enables you to discriminate not only as to the character of food needed, but

also as to quantity—depends largely on perfect mastication.

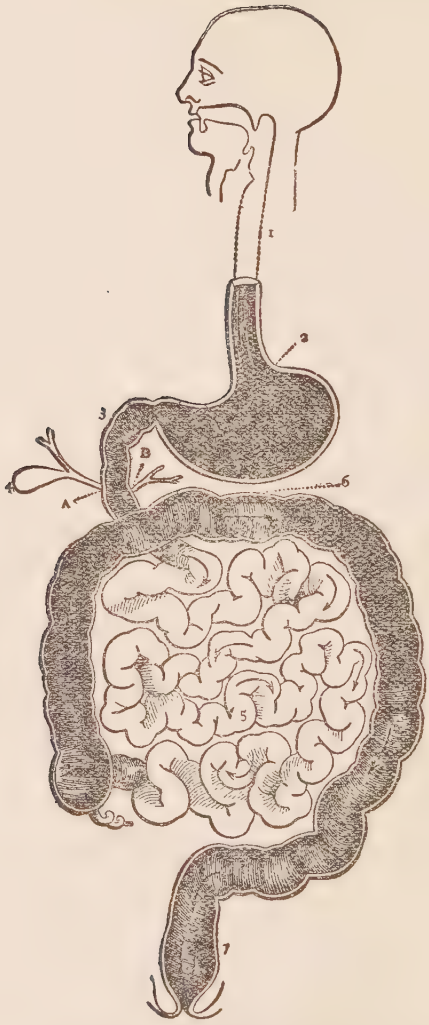
"The message of warning which taste gives in connection with eating is: 'That while any taste is left in a mouthful of food in process of mastication or sucking, it is not yet in condition to be passed on to the stomach; and what remains after taste has ceased is not fit for the stomach.'"—*Horace Fletcher.*

If the food is bolted, if the sense of taste is outraged continually, its power naturally becomes dulled and you are left without a guide, which should at all times clearly indicate the character of the food needed to nourish the body, and which should refuse to recognize any flavor in any food after the needs of the system have been supplied.

One can readily imagine the condition of a man under the circumstances described. He has no definite idea as to what to eat, and his only guide is the feeling of fullness in the stomach.

The importance of good teeth is of course very great and extreme care should be given

to them that they may be preserved to the end of life. The principal cause of decayed teeth, however, is the lack of exercise from which they suffer through persistent insufficient mastication. If they are given the proper use required in order to masticate the food as here suggested, they will immediately begin to improve in condition. The fermentation of foods in the stomach, as evidenced by a foul breath and coated tongue, also has much to do with the decay of the teeth; and upon the recognition and adoption of the habit of proper mastication, these foul conditions will naturally disappear, and the tendency of the teeth to decay from this cause will immediately cease, if the teeth are put in good condition, all decayed parts removed, and filling used where needed.



ALIMENTARY CANAL.

1. Esophagus. 2. Stomach. 3. Duodenum. 4. Gall bladder. 5. Small intestines. 6. Large intestine. 7. Rectum. 8. Biliary duct. 9. Pancreatic duct. 10. Vermiform appendix.

(From Dalton's Physiology.)

CHAPTER III.

PROCESS OF DIGESTION.

Though I have tried to avoid all possible use of technical terms, in the following very abbreviated description of the digestive organs and their processes, their use will be occasionally required.

In order to make the work of digestion as clear as possible without a lengthy description, we will follow the food in its travels through the alimentary canal, explaining the actions of the organs and various digestive juices with which it comes in contact.

After food has been called for by appetite and has gone through the first process of digestion by thorough mastication, it is swallowed and allowed to enter the stomach. Now immediately upon entrance, this food comes in contact with the gastric juice which is secreted by the peptic glands, and which exudes in tiny drops from the inner surface of the stomach

like perspiration from the pores of the skin. Not only the quality but the quantity of this digestive juice furnished depends greatly upon how much food is needed—in other words on how hungry you are at the time the food is eaten. The feeling of hunger, the ability to heartily enjoy the food eaten, is an unmistakable indication that there will be secreted a full supply of these digestive juices, that will be poured forth copiously as the process of eating and digesting continue; and the more intensely the food is enjoyed, the more each morsel is dwelt upon in the act of mastication by the sense of taste in the endeavor to secure its most delicious flavor before swallowing, the more freely does the gastric juice flow, and, naturally, the more perfectly is the work of stomach digestion performed.

The time required for stomach digestion depends greatly upon the character of the food, and upon how carefully the work of mastication has been performed. If the food has been hurriedly bolted it will require much longer than if it had been practically reduced to a

liquid before swallowing. The period of digestion has been variously estimated from two to five hours. The stomach, while digestion continues, involuntarily churns and presses the food back and forth within its walls that it may be thoroughly mixed with the gastric juices. Portions of the digested food that are rendered liquid are all the time being absorbed by the stomach during this process. As the gastric juice of the stomach only digests albuminous, muscle making, articles of food, that will readily account for the feeling of increased muscular power which so quickly follows eating when one is tired and much in need of nourishment; and, when mastication has been properly performed, the saliva begins the work of digesting all starchy, heating foods, and undoubtedly some of this is also absorbed by the glands of the stomach, thus also accounting for the feeling of increased warmth that usually follows half an hour or more after a meal. Of course immediately after a hearty meal the blood is attracted to the stomach in such quantities in its endeavor to supply the gastric juice and do

the other work in connection with digestion, that one naturally feels the cold more than usual for a short time, if exposed, but this passes away within half an hour at most after a meal and a feeling of increased warmth is then noticed.

As part of the mass, being digested by the stomach, assumes a condition that indicates the process of stomach digestion has been completed, it is allowed to pass the pylorus and enter the duodenum, which is a part of the small intestines. Here the food comes in contact with two other digestive juices that are poured forth under normal conditions as needed —the bile and pancreatic juices. The bile is alkaline in character; it neutralizes the gastric juice, emulsifies the fats, making them soluble, and it also has antiseptic qualities which act upon the entire intestinal canal. The pancreatic juice is similar to the saliva of the mouth and performs important offices, though in addition to digesting starchy elements it also digests albuminous—muscle making—and fat.

From the duodenum the food enters the prin-

cipal part of the small intestines. Here it comes in contact with another fluid called the intestinal juice. This juice possesses the power pecular to itself of digesting all the various food elements, thus practically completing the work of digestion. The small intestines are supplied with a very large number of glands which absorb large quantities of the nourishment made ready by the various digestive juices with which the food had previously come in contact. From the small intestines the food is slowly forced into the colon where absorption still continues though in a much more limited degree.

For a technical description of the process of absorption of the nourishing elements of the food, I refer you to the following by Dr. J. H. Kellogg:

"The process of absorption begins almost as soon as food is taken into the mouth, and continues so long as any soluble nutriment can be extracted from the alimentary mass. The work of absorption is performed by two sets of absorbent vessels, minute veins, and lymphat-

ics, here called lacteals. The venous absorbents take up whatever is held in solution in the food taken into the stomach, and the principal portion of the digested farinaceous, saccharine, and albuminous elements of food. The lacteals absorb the emulsified fats, and some portion of the other elements. The products absorbed by the venous absorbents find their way into the general circulation through the hepatic vein, after passing through the liver, which is apparently a wise arrangement of nature, to provide for a sort of filtration before the more delicate tissues of the body are exposed to the action of whatever deleterious elements the food may happen to contain. It is claimed by physiologists that the liver has also an important function to perform in completing the work of digestion, especially that of starchy substances. The food mingled with venous blood is conveyed to the liver by the portal vein. Those products which are absorbed by the lacteals, reach the general circulation through the thoracic duct, a long, slender lymph vessel which empties "into the large vein from the arm on the left side."

CHAPTER IV.

AIR.

Though air is not generally considered a food, the oxygen secured from the air is really more essential to life than any food element. We can live without food for months; we can live without water for many days, but we cannot live without oxygen for five minutes. This fact is not recognized generally, and the breathing of impure air which has been enclosed and breathed over and over again, has caused many very serious diseases. There is hardly a home in which proper precaution is taken to secure thorough ventilation during the winter months.

Air is really a food. It must be looked upon as a food because, as I have already mentioned, oxygen is more necessary to life than any other element.

No matter what precaution we may take to build up vigorous health by eating and drinking proper food in proper quantities, but little

can be accomplished unless you are careful to see that pure air is supplied at all times. Pure cold air is one of the greatest tonics in the world. I do not personally believe that it has ever injured any one, except where the temperature has been so low, and exposure so great, as to actually freeze a part of the body. Colds, though apparently produced in numerous instances by exposure, are really made possible because of the existing impure condition of the blood. In other words, if enjoying perfectly normal health, there is not the slightest danger of a cold.

Impure air is especially the cause of consumption. Thousands are to-day dying of this disease where it has been wholly produced by this one cause. They " catch a cold " and from that moment live in constant fear of fresh, pure air, and the result is that the cold never disappears, gradually becomes worse and worse, the impurities in the body increase in quantity, and the microbes of this disease finally secure such a strong hold upon the lungs that they sap life rapidly. No matter how care-

ful attention may be given to your diet, if you do not realize the importance of pure air, and see that you secure it at all times, there will be but little chance of developing any great degree of strength. When air is breathed over and over again it reeks with carbonic acid gas which is exhaled from the lungs of every living being. This is a poison which is most baneful in its effects, and a diseased condition of any character is greatly encouraged under such abnormal conditions.

At night the windows should be open at both top and bottom, winter and summer, if one expects to retain vigorous health. Without pure air you can no more retain health than you can live without eating. Of course one may be able to apparently enjoy vigorous health for a prolonged period and still give little attention to the necessity of pure air, but this merely indicates the possession of a very vigorous constitution, and a continuance of the habit of breathing foul, enclosed air will in every case ultimately produce serious disease. No matter where you may be, whether in office,

school-room, or in your own private chamber, remember the imperative necessity for breathing air that is liberally supplied with oxygen.

Perhaps you fear cold air A draught may have all sorts of diseases in its grasp. When I first began the study of hygiene and health many years ago, I was continually puzzled by the average person's fear of draughts. Draughts are currents of air. But one could meet a current of air on any windy day. Then later it was explained that a draught was a current of cold air in a warm room. In other words, if one is in a warm atmosphere and a cold current of air comes in contact with one part of his body, while other parts are encompassed in warm air, this cold air is supposed to be a draught.

But whenever one leaves a warm room the face and hands or other parts not covered would come in direct contact with this cold air, while the covered parts remained in the warm air, retained by the clothing; therefore, any time one goes out in cold weather he submits himself to exactly the same conditions as when

encountering a draught in a warm room. This caused me to immediately conclude that the supposed effects of draughts existed in the imagination only, and for many years I have made a practice of sleeping with one of these much-libeled draughts, blowing directly upon me, for then, I can breathe air rich in oxygen and pure in quality. I am unquestionably stronger and healthier because of this practice, and never have known a single occasion when it has produced any ill effects, though I have actually felt its wonderful health-giving influence on innumerable instances.

Now let me state clearly my conclusions:

Cold air, whether a draught or otherwise, never has in a single instance produced any ill effects, unless preceded by very serious suffering because of severe cold; and even in this case, no possible harm can result unless the individual is not accustomed to cold air, or part of his body has actually been frozen by the extreme cold.

You may ask, why does cold air sometimes produce colds?

Because the influence of cold air tends to bring every organ into a more normal vigorous condition, and when a cold is produced, it is simply one step toward recovery or normal health. The system was over-loaded with impurities at the time of exposure, and the cold air created the cold as a means of assisting in the elimination of these impurities.

A cold never injured a single human being. It is the treatment for colds that produces death, from pneumonia, consumption and hundred of other serious diseases that often follow colds.

The influences which fill the system full of impurities are the real cause of colds. This condition is brought about usually by over-eating, lack of exercise, breathing and re-breathing confined air, or over-loading the body with clothing, or any excess or evil habits that lessen the vigor of the body.

To cure a cold, you simply use every possible means to assist in the elimination of the impurities which are being expelled by the cold. When these impurities are all eliminated the

cold will, of course, disappear. Instead of being afraid of draughts, make a special effort to live in them as much as possible; instead of covering the body with heavy clothing day and night, use barely sufficient to keep warm, and no more; instead of eating without appetite or endeavoring to excite a false one, do not eat until your craving for food becomes intense, and usually, if several meals are missed, the cure will be much speedier because of this abstinence. Of course, vigorous exercise, long walks, deep breathing and the increased activity of the skin, produced by exposing the surface of the body directly to the air, and by friction with a soft bristle brush, will be of great benefit in eliminating these impurities and thus bringing about normal health.

CHAPTER V.

WATER.

Though many do not consider water a food for the reason that it does not furnish energy, it nevertheless constitutes a large part of the body, and is as necessary to life as any other element which enters into its composition. The importance of pure water can hardly be exaggerated. That which comes from springs is usually considered the most wholesome. Well water, in numerous instances, has been found to be about as pure, though where a well is located adjoining outhouses—stables, privies, etc.,—there is always very serious danger of their impurities contaminating the water. The water supplied in cities, though in some instances very bad, is usually far better than the well water secured in such localities.

Referring to the mineral waters that are on sale everywhere I would say that as a rule they cannot be commended. About the only advan-

tage possessed by these waters is merely the fact that one drinks a larger quantity of them than ordinary water, and the body is thus flushed and cleansed. If one would simply secure some pure water and by adding salt or any harmless element that will cause him to drink largely increased quantities of it, exactly identical results can be produced, to those brought about by the use of mineral waters. The principal ingredient in most of these mineral waters which causes one to largely increase the amount used, is salt. This may have an advantageous influence, upon the system when the body is filled with impurities, as the purifying quality of salt is well known, though some hygienists claim, probably with grounds for their conclusion, that salt if used continually in great quantities, has a tendency to dry up the tissues.

The best way to judge as to the purity of the water is to carefully note as to whether it has the slightest taste, and if there is no indication of this, you can depend upon its purity. Of course where one's taste has been blunted by over-eating and other intemperate indul-

gences it would be difficult for taste to distinguish the difference.

Most sedentary workers do not drink sufficient water. It is a well-known fact that a certain quantity of liquid is necessary to the proper circulation of the blood, and to enable all the organs of the body to properly perform their functions. In diseased conditions of all kinds the drinking of copious draughts of water will, in nearly every case, be found productive of beneficial results.

Distilled water can be recommended, and an apparatus can be bought which will furnish it, but it is well to remember that distilled water contains no minerals of any character, and numerous authorities maintain that a certain amount of mineral elements in water is advantageous. I would call attention to chapter referring to mineral food elements.

Filtering is of course of advantage, and whenever the water is inclined to be unsatisfactory a filter can be purchased, or a cheap one can easily be made for home use by merely arranging an apparatus so the water will pass

through sand and charcoal. The necessity, however, for frequently cleaning the charcoal should not be forgotten.

The quantity of water needed to maintain the proper condition depends very greatly upon the individual and upon the temperature. In very warm weather considerable water is necessary, that the exterior part of the body may be cooled by evaporation, or perspiration, as it is usually termed. No matter how high the atmospheric temperature, the body retains in all cases when in a normal condition, a temperature of about 98½ degrees Fahrenheit, and this is maintained simply by the cooling of the exterior surface from evaporation; thus you can readily see, if engaged in some vigorous exercise that heats the blood, or if the temperature is high, the necessity for water greatly increases.

Though pure water is unquestionably of great advantage, it would be well to call attention to the fact that if the body is in a normal condition of vigorous health there is little danger from water which gives no evidence of im-

purities to the taste. Under normal conditions of perfect health no disease germs of any kind can live in the human stomach. There are germs of health as well as germs of disease, and when the body is in a perfect condition, these germs of health are always stronger than any disease germs which may be introduced, and under these circumstances they are always the victors when compelled to come in contact with the baneful enemies to health.

CHAPTER VI.

OVEREATING.

One of the greatest sins against the body is overeating. The intemperate indulgence in alcoholic liquors, is, unquestionably, a great evil. It fills thousands of graves, and ruins thousands of homes, annually. But the evil of alcoholic intemperance is at nothing when compared to the evil of overeating. The habit of overeating is almost universal. Hardly a home exists that is not made unhappy, to a greater or less extent, by this habit. Hardly a life has been wrecked in health that this evil has not played an important part in causing the wreckage? In fact the evil of alcoholic intemperance itself, is largely caused by overeating. The stomach becomes overloaded; the mass refuses to digest—it ferments, and there is a desire for something, the victim hardly knows what—anything to rid the stomach of its vile contents. Alcohol affords this temporary relief. It spurs

up the organs to increased activity, as they endeavor to quickly eliminate the poison, and when alcoholic liquors are taken under these abnormal conditions, it may actually be a natural appetite and productive of benefit instead of evil, for the evil that will result from the undigested mass of fermenting food if it remains in the stomach for a great length of time might be as great or greater than that resulting from the use of liquor.

There has been so much preaching on alcoholic intemperance that whenever one speaks of intemperance he is supposed to refer only to this evil. But it is time these narrow-minded temperance advocates were awakened—it is time for them to realize that the real cause of alcoholic intemperance is intemperance in eating; and never until this is understood and made plain to the victims and the classes that are to furnish other victims, will anything of importance be accomplished towards stamping out the alcohol curse. Intemperance begins at the family table, and it is perfectly natural,

perfectly logical, for it to drift to the corner saloon.

Overeating permanently distends the walls of the stomach, and lessens their muscular vigor. It often actually strains these muscles permanently, and the churning process so necessary to perfect digestion, which the muscles involuntarily perform, cannot be properly accomplished. They become weakened just as would a muscle in the arm if unduly strained, or overworked. Their efficacy lessens under these circumstances to a similar degree. It would be well for every reader to remember that the entire digestive process is brought about largely by involuntary muscular action, and when the muscles are unnaturally strained as they are where the stomach is habitually overloaded, all the muscles are weakened and their functions greatly impaired, and in the end destroyed.

"There are two ways of putting a limit to a meal—to eating. One—the wrong one—comes in the shape of a protest on the part of a too full stomach while the appetite is yet rav-

enous. The right one comes naturally from a perfectly satisfied feeling—a ceasing of desire for anything more, no matter how alluring to the palate—before the stomach is overburdened. The former is evidence of glut, or gluttony, and the latter is Nature's way, for which there is every desired reward."—*Horace Fletcher.*

The gastric and various other juices, so necessary in the stomach's perfect work of digestion, are not supplied in sufficient quantities, nor of proper strength, when overeating is habitually indulged in. This naturally causes serious complications, for which every remedy known to medical science has been prescribed without avail, unless the causes of the condition were discovered, and removed.

Thus, you can readily perceive that these two results of overeating—the weakening of all the belt of muscles about the stomach and other vital organs that carry on involuntarily the very necessary work in connection with the digestive process, and the lessening in quantity and quality of the digestive juices—would se-

riously interfere with general nutrition. Not only is the quantity that could be secreted by the various glands of absorption lessened, but the quality of the secretion is poor. Every part of the nourishment absorbed under such circumstances is filled with impurities and foreign matter that the natural depurating organs have difficulty in elminating, and the result is these impurities finally permeate every part of the entire body.

The presence of these impurities is manifested in various forms. Medical science has thousands of names for diseases that are nothing more than efforts on the part of the functional system to discharge superfluous and harmful impurities that have been brought into the body. Eruptions, boils and all skin diseases are the results of nothing but impurities being discharged through the skin. Rheumatism, pneumonia, fevers, headaches, neuralgia, etc., are nothing but impurities overburdening some particular part of the body, and the crying out of muscles and nerves against their existence; and in nearly every case whatever

the so-called disease, or its nature, these impurities are present in the system primarily because food was taken into the stomach in excess of the body's needs, and beyond the powers of the digestive organs.

"It is generally supposed that if a man has an unusually large day's work to perform, he must eat an unusually large breakfast and a proportionately large dinner. This is certainly an error. Large demands upon either the muscular or the nervous system for the time being detract from the power to digest. The stomach requires nervous energy to enable it to perform its function. If the nervous forces are otherwise engaged or used, they cannot be utilized in digestion. Hence it follows, theoretically, at least, that instead of giving the digestive organs an extra task in preparation for an extra effort, they should be required to perform less than the ordinary amount of labor. Experience as well as theory supports this view. Sir Isaac Newton, when employed in his most arduous labors, lived upon bread and water, and fasted for long intervals. Gen-

eral Elliot, the famous defender of Gibraltar, is said to have subsisted for a number of days on a litle boiled rice. The wonderful L'homme Serpent of Paris, always fasted for twelve hours before attempting to perform his marvelous feats of agility. This plan not only secures a higher degree of efficiency in the effort made, but prevents, in great degree, the injury liable to result from excessive exertion. When required to overwork for a succession of days, we have found that we were not only able to perform much more work, but to do it with less effort at the time, and less exhaustion afterward, when taking a greatly reduced quantity of food than when attempting to do the same work and still taking the usual quantity of food. I have no doubt that a neglect of this precaution is a not frequent cause of many of the sudden deaths of which we so often receive accounts, especially among politicians and public men. Overloading the stomach and overworking the brain at the same time is exceedingly dangerous. The man who overworks mentally must be temperate; he must

exercise the greatest moderation in his eating, and must totally discard all stimulants and narcotics. A great share of the cases of apoplexy occur when the stomach is full. The increased clearness of intellect which results from abstemiousness will repay one for all the self-denial practised."—*J. H. Kellogg, M.D.*

The continued strain on the digestive apparatus caused by overeating not only weakens the general digestive powers, but the entire muscular and nervous system as well, as it suffers severely in consequence of this. That "tired feeling" is always present. You never have any energy—all your enthusiasm seems to have disappeared. The impure condition of the blood would naturally cause this, but the fact that all the energies are spent in the endeavor to right the digestive disorders, to rid the stomach of the loads that are continually being forced upon it, no doubt does much to influence this condition.

"Gluttony imposes upon the body a quantity of matter which is underdone; that is, under-

prepared; so that only a small portion of it is suitable for nutrition, leaving the greater part to ferment within the channels and strain the intestines until they are contused and weakened.

"Such is the impetuosity of uncultivated or perverted human tendencies that the desire for acquisition, sometimes called greed, impels one to swallow one mouthful of food to take in another, without ever dreaming that the very last contribution of taste to the last remnant of a delicious morsel is like the last flicker of a candle, more brilliant than any of the preceding ones. In eating, the last taste is more perfectly in possession of the solution, is better than all the other stages of the process. It is the choicest and sweetest expression of the incident, as related to each mouthful. Then why not court it and obey, thereby, Nature's first law of health?"—*Horace Fletcher.*

The brain, also, suffers intensely. It is almost impossible to do brain work with any degree of satisfaction. There seems to be no connection between your thoughts. The power

of concentrating the mind upon any subject entirely disappears.

Another unfortunate result of overeating is the entire disappearance of a normal appetite. One cannot tell by the appetite what the system mostly needs. He or she simply eats until a feeling of fullness indicates that the stomach is crammed to its capacity, as a packing case, and that it is time to cease, instead of eating until hunger has been appeased. As explained in a previous chapter, eating, without appetite, is an outrage against the stomach. The victim of overeating always eats without appetite. He may have a desire for something—anything to relieve his unsatisfactory feelings—but a normal craving for food needed to nourish the body, he really never experiences.

These victims of overeating are sometimes thin, even to emaciation. They so overcrowd their digestive organs that really every particle of vital energy is used to rid themselves of the never-ending supply. Others assume chronically a bloated appearance, though the skin looks rough and unwholesome in appearance

and color. Many victims of this vice will say "I never overeat. Why, I hardly eat anything —I have no appetite—I merely eat enough to keep up my strength."

The one who loads his stomach to its fullest capacity is not so great a sinner as he who merely eats under the idiotic idea that he is keeping up his strength. When one loads the stomach to repletion he usually eats with appetite, the food is invited, but the "eat-to-keep-up-my-strength" idiot never allows his stomach to prepare for food, never gives it sufficient rest that it may develop an appetite, and under these circumstances indulgence in the smallest possible quantity of food would be overeating.

CHAPTER VII.

THREE-MEAL PLAN.

Though I believe either the two or the one-meal plan would be found superior to three meals each day, one can undoubtedly follow this usual method and still retain vigorous health if he will occasionally fast by missing one or two meals, or a day or two when the appetite fails; and if he will abstain totally from food when illness of any kind threatens. In eating three meals daily there is always far more danger of eating beyond the capacity to digest. One meal is sometimes not digested when the next meal is eaten. The food, under these circumstances, is eaten with less appetite, and all the ills that are brought about by the sin of eating as a duty are invited. If three light meals can be eaten each day, always with appetite, and if they seem to digest without trouble, there is no very serious objection; but the moment any digestive disturbance be-

comes evident, the one or two meal habit should be immediately adopted.

It would also be well to remember that the three meal habit often tends to actually lessen the virility of the blood. The gastric, and other digestive juices are not sufficiently strong to abstract all the best elements of the food; the blood becomes filled with waste and other foreign matter, and the process of eliminating this, results not only in a waste of energy, but usually, under such circumstances, there exists at least a chronic "tired feeling," though often troubles are induced that are far more serious in character.

If one is doing hard manual work there will be found little or no difficulty in digesting three meals, though two meals would certainly be better; but mental workers, to my mind, make a great mistake if they attempt to force this same habit upon themselves. In fact the belief so universally held that we must eat three meals each day to maintain health is unquestionably one of the principal causes that lead to many serious illnesses. It is this false

theory that compels many a poor weakling to eat because it is the usual time, and every morsel adds to the poison and filth that is already lessening his physical forces. Whatever habits of eating you may have adopted keep clearly in mind the necessity for that appetite described in previous chapter, to lead and guide you. If you do this the problem of how many meals to partake of daily will solve itself. You will at once avoid those meals for which you have no appetite and, in consequence, eat more heartily and with more benefit, of those you do enjoy. There is at least a grain of truth in the old and oft-quoted saying: "What is one man's meat is another's poison," and each individual must study out these problems for himself, and, though experiments that are extreme in character are not advised, still a trial of, first the two-meal plan, and, later the one-meal plan, can do no possible harm, and the experiment will enable you to determine just what is best for your particular needs. But little knowledge can be gained by one or two days' trial. At least a week should be devoted

to each method if you are desirous of securing knowledge of value in determining as to your personal needs. The no-breakfast method often proves its advantage by showing an increase of energy the first or second day of trial.

I have nothing to say to those who consider more than three meals per day necessary. It is simply impossible to retain vigorous health for any length of time under such dietetic intemperance, and usually a liberal quantity of alcoholic liquors must be used to spur the digestive organs to their labors, and, though this alcohol may suffice for a time, there results such a waste in vitality, such a drain on energy, that the term of life is unquestionably lessened, and serious ailments are sure to be produced sooner or later, by the habit of continually overloading the stomach.

CHAPTER VIII.

TWO-MEAL PLAN.

Two meals each day will furnish necessary nourishment for any one, no matter what his occupation may be. The idea that the stomach must never be empty, that it must have something to work on or it will digest itself is the product of brains that cannot deduce true conclusions from plain facts. For the past fifteen years I have personally followed the two-meal a day habit. On numerous occasions I have tried, three, four and even five meals a day, but on comparison of my mental and physical condition with that which was usual on the two-meal plan I always went back to two meals. At the time when I was doing the hardest physical work I ever was occupied with during my entire life, I only ate two daily meals, and one of these was usually a light lunch. This was when training for hard championship wrestling matches, and there is really

no harder physical work than this. At this particular time, when my muscles had to be able to withstand the enormous efforts required in struggling with well-trained and burly antagonists I had an occasion to learn in a most striking manner, the value of the two-meal-a-day plan. In a wrestling match endurance is of great value. The ability to struggle and strain apparently with all your power and still seem not to tire, is one of the necessary qualities in a successful wrestler. I was some time in acquiring this, but when I finally concluded that diet was of some importance, and began to experiment, not only with different foods, but also with the quantity necessary to maintain the greatest strength, I secured information of great value. My experiment taught me that the less you eat the better what you do eat is digested. That induced me to try the two-meal-per-day plan, and the almost immediate increase in my endurance so impressed me that the habit of eating only two meals per day has practically been followed by me ever since. On many occasions, after

adopting this new diet I met wrestlers who seemed as strong and as scientific as I, but I felt at the time that they were doomed to defeat simply because my diet was superior to theirs, and, as stated in another chapter, never on any occasion after I adopted this plan of diet was I thrown a single fall in a wrestling match at my favorite style.

About the easiest method of giving this two-meal-a-day plan a trial, if living with a family where three daily meals are served, is to avoid breakfast altogether, eating your first meal at noon; or, if this is difficult, the first meal can be eaten in the morning, and the other meal in the evening. The best time to eat under these circumstances is the first meal between 10.30 and 11.30, and the second meal between 5.30 and 6.30. Usually the hours here mentioned will be found satisfactory, but the occupation, the hour of rising and retiring would naturally have considerable influence upon the proper time for meals. The first meal should be eaten from four to five hours after rising, and the second meal should follow this

five or six hours later. As to which meal should be the heartiest, should advise one to depend altogether on the appetite; though, if the second meal is not eaten several hours before retiring the first meal should be the heartiest, as the digestive powers must be very strong to counteract the evil effects of retiring after a very hearty meal.

CHAPTER IX.

ONE-MEAL PLAN.

To most Americans one meal per day would seem like starvation, but many thin persons have been known to gain greatly in weight by the adoption of this abstemious diet. The explanation of this apparent phenomenon is simple. When following the regular three-meal plan, they had acquired a habit of eating beyond their power to properly digest, and of eating at meal time regardless of whether an appetite existed or not, and the result of this pernicious practice was naturally disordered and weakened digestive organs, and when the one-meal plan was adopted the food was not taken until there was an actual need for it, until the stomach was able to receive and dispose of it, and the natural result was gradual increase in weight and strength.

One's habits in eating must be determined largely by his occupation. One meal each day,

though not by any means a hardship for those following mental and other sedentary occupations, would be rather difficult for the manual worker who begins early and labor until late.

I have personally followed the one daily meal for a month or more at one time, and have lost no weight worth mentioning and have been able to do my work with the same energy as usual. One very pleasant feature about this plan is the keeness of the appetite. There is no "dilly dallying" at meal time under these circumstances. You are there to eat, and even if your food is of the plainest kind every morsel is dwelt upon and enjoyed to the fullest extent. The great importance of enjoying your food has been explained in a previous chapter, and this one-meal plan will quickly, in every case, entirely cure any lack of appetite. And for this purpose alone—that is, creating a keen relish for food—it is especially advised and should be adopted in every case as the first means of remedying lack of appetite.

Of course, the meal under such circumstances is always quite heavy and no active

work of any kind should be attempted for sometime after. All the energies of the body are then needed to digest, and nothing should be allowed to interfere with this important work. This meal could be eaten in the middle of the day though the best time would naturally be in the evening after the day's work is done. It should of course precede the time for retiring several hours, as the work of digestion is not usually carried on with the same energy during sleep as when awake.

Many object to this plan because of the fear of overloading the stomach. There is but little danger of this if the rules in reference to proper mastication are followed. It is only when the food is hurriedly bolted that the appetite is unable to indicate when sufficient food has been eaten, and when you blunt and deaden the sense of taste by such unnatural speed in eating you must not complain if it fails in its duty.

CHAPTER X.

MEAT, OR MIXED DIET.

Though I am inclined to favor what is called a vegetarian diet, when milk and eggs are not excluded, I am not one of those who holds that a high degree of health cannot also be acquired and retained with a mixed diet. I firmly believe that meat is, to a certain extent, stimulating in character, and that more impurities will be deposited in the body under its influence than that of the vegetarian regimen. Fasting will be necessary more often, as a means of cleansing the body when meat is used than with a strictly vegetable diet. However, if one takes regular exercise, does not gourmandize, and fasts when necessary, he can undoubtedly follow the mixed diet, and live to a good old age, and probably enjoy as good health as the non-meat-eater.

The average man, if left to his own choice, readily adopts the combination diet. To some

this might show that instinct influences this choice, and it is therefore the natural diet, but this is hardly the case. We might just as well say that instinct teaches one to like whiskey and tobacco. Human beings in their habits are not far different from sheep. They always follow some leader, and each leader in turn follows some other leader. It is really remarkable how little we question the wisdom of those who came before us.

In my own athletic experience, when I was compelled to carefully note the influence of all kinds of food on health and strength, I found that meat would increase my actual strength, but would lessen my endurance. I could lift a heavier weight under the influence of a diet in which meat was liberally supplied, but could not lift a lighter weight so many times. I found, also, that eggs were not open to the same objection as meats, though they seemed nearly, if not quite equal as a means of supplying strength. In eating the flesh of animals you, of course, consume not only the perfect muscle cells, but also a certain amount of waste matter

that would naturally always be present, while in an egg you secure practically nothing but pure nourishment. Both strength and endurance are necessary, not only in all athletic contests, but in every condition of life, and in solving the problem of how to attain my greatest possible strength without losing endurance, I found, after many and prolonged experiments, that although some meat seemed necessary, it was desirable to greatly limit the quantity. I ate eggs quite frequently, but usually would not touch meats oftener than once in two to four days. At this particular time I was training for hard wrestling contests, where not only great strength but great endurance was required, and with my two-meal per day diet, consisting mostly of eggs, whole wheat bread, vegetables and fruits, with an occasional indulgence in meat, as mentioned, I was in such condition that no wrestler ever gained even a fall from me at my favorite style, and many of my opponents were men who weighed from ten to fifty pounds more than I.

A diet of meat alone, which has been advo-

cated by some enthusiasts, has never in the slightest degree appealed to me. Though I have been willing to experiment on all sorts of theories in reference to diet, this exclusive meat theory always appeared to be entirely devoid of the slightest excuse for existence. The individuals who have held these theories have, no doubt, effected temporary cures in numerous cases, as the average individual, if confined to any one particular food, would usually recover under its influence for the simple reason that in nearly every case the principal cause of illness is overeating, and whenever one article of diet is used and all others avoided, the natural result is the quantity eaten is greatly lessened, and the entire system secures an opportunity to thoroughly cleanse itself. It might be well to note that these same persons who were able to recover under the influence of a meat diet would have recovered far quicker under the influence of no diet at all; in other words, by fasting.

I have never met but one victim of the exclusive meat-diet theory, and his appearance would not by any means have influenced me

favorably towards it. This man was at one time an athlete of great reputation, and his exclusive meat diet, together with other theories along dietetic lines, had simply reduced him a physical wreck. He was finally confined in an insane asylum as irresponsible, and afterwards died of consumption. I do not for a moment believe that the cause of all his troubles and untimely end was the meat diet solely, but I firmly believe that it had strong influence in bringing about these unsatisfactory results.

The question as to which diet is superior, the mixed or vegetarian diet, may be worthy of consideration, and each individual should settle it for himself and abide by his own conclusions, but the exclusive meat diet has not a single rational excuse which will uphold it.

CHAPTER XI.

VEGETABLES.

Though I am inclined to favor a vegetable diet I am not one of the rabid kind. I usually eat whatever my appetite calls for, and sometimes do not touch meat of any kind for months. I firmly believe that if one can secure a sufficient variety of fruits, grains, vegetables and nuts that there is not only no actual need for meat, and that one would be far better off without it. Meat unquestionably tends to fill the blood with elements that cannot be readily eliminated by the depurating organs. If meat was included in my diet when attacked by illness, as a first step towards a cure, it was always immediately avoided, and often this has been all that was necessary in order to bring about the desired results. But the most startling evidence in favor of vegetarianism is the fact proven in my own athletic experience, and in the experience of many others, that the vege-

tarian diet gives one far greater endurance than the meat diet. It makes a better quality of muscle. The theory is maintained that the food in meat has already been used by the animal from which it was secured, and, in eating his flesh you really secure nourishment second hand. The life principle in the vegetable matter, that the animal converted into flesh, has been partly consumed by him, and in eating his flesh you are simply able to extract what remains.

There is no doubt that a better quality of blood is made from a vegetarian than from a meat diet. There is less danger of overeating. Many say that the average vegetarian does not seem as vigorous as the meat eater, and there is a certain degree of truth in this claim, but it must be remembered that vegetarians are not stimulated up to the highest point as meat eaters usually are. Furthermore, meat eaters are more often addicted to the use of alcohol than are vegetarians. This naturally adds more flesh, and gives them a more vigorous appearance in the eyes of those who are unfamiliar

with the natural signs of health. Fat is not health. Bloated red cheeks are not by any means a sign of health. They are a sign of disease and such a person is just "ripe" for the first microbe that happens to come his way.

Then again, many vegetarians are poorly nourished. They do not eat the proper foods. They eat too much white bread and other foods that do not contain the necessary elements to feed the body in proper proportion. Many vegetarians also eat too frequently, do not fast when nature commands, and they suffer from overcrowding their digestive organs, just as does the meat eater.

Vegetarianism is unquestionably the natural diet of man. He will attain a more mature age when subsisting on this character of food than when on flesh diet. When the fact is considered that nearly all of our own medium class farmers are practically vegetarians, not from choice, but because of their inability to get fresh meat there remains but little to support the flesh-diet theory.

Attention is often called to the British as the

meat-eating nation, and even there the poorer classes of England, Ireland and Scotland, which, really furnish the vigor upon which is founded the brains of the country, are nourished almost entirely on vegetarian diet. Like our own middle-class farmers they can not afford meat more than once or twice each week, and sometimes not even so frequently. No serious objection can be made to eggs and milk if they seem to be properly digested, though in the strictest sense they are not really a part of vegetarian diet.

Each individual should study out his own salvation. Find the diet that seems to furnish the most energy and then adhere to it until you have good reason to change. If this suggestion is followed, sufficient care is maintained not to overeat, regular exercise is taken and if an occasional fast of a day or two is practiced when necessary, there will be but little deviation from that high degree of health which fills life with such vast possibilities.

CHAPTER XII.

RAW DIET.

From a theoretical standpoint it is easy to reason to the conclusion that a raw diet—grains, vegetables, fruits and nuts—should be the natural food of man. One can easily imagine how the first man to discover fire found comfort in basking in its warmth, and how natural it would be under these circumstances for him to also first warm any food that he might wish to eat.

Thus it is not at all difficult to find the origin of cooking, for, from warming to cooking a food is but a step. Although from a theoretical standpoint raw food seems to have been intended by nature as the best for all animal kind, human and otherwise, the fact that we have for many generations subsisted almost entirely on cooked food must be considered. Although many experiments are recorded where a raw-food diet has been followed with advantage,

there is not a large amount of satisfactory information to be obtained on the subject. It appears that those who have adopted a diet of this character were usually in bad health, and naturally not a great amount of confidence is created unless one can point to a vigorous example of the results of following a particular diet. Recently, however, there has been more interest in the subject, and I am personally carrying on some experiments that will no doubt enable me to say something of value along this line in the next edition of this book. This much has been conclusively proven, namely that diseased conditions of all kinds will disappear more rapdly under the influence of a properly arranged raw diet than with a cooked diet. A raw diet contains of course, all the waste that is so advantageous in keeping the bowels regular, while most cooked foods are sadly lacking in this regard. One enthusiast on a raw diet, who claims to have cured himself of serious physical weakness by adopting this diet, states that cooking destroys the life germs of all grains, and that in eating such food we

lose just that much. In other words he maintains that if the food is eaten raw one will absorb this life germ, that it will add just that much to life, and strength, and the theory undoubtedly sounds quite plausible. I have done some experimenting with a raw diet and the results have been of a character to encourage me to desire to do more. But enthusiastic readers are warned to use great care in any experiments they may attempt. Do not go to extremes. In any radical change that you may contemplate making in your diet you should feel your way step by step. All the raw-food enthusiasts claim that there is not the slightest danger of overeating when following this natural diet, that it does away entirely with the desire for a stimulant of any kind.

There is, however, much to be learned along this line and it would be well for those inclined to be reckless to await the results of the experiments of those who have given the subject careful study before seriously considering the advisability of giving such a diet a trial. An experiment made by the U. S. Agricultural De-

partment has clearly shown that cooking tends to decrease the digestibility of foods in the case of animals. Though it will naturally be argued that this proves little or nothing as to the value of cooking foods intended for the human stomach, because of our having been accustomed to cooked food for generations; still, it shows quite clearly that there is reason to believe that prolonged experimenting with raw-food diet for human beings may reveal some valuable information.

I quote the following from the U. S. Department of Agriculture's Bulletin No. 22:—

"Ladd, while connected with the New York State Station, reported analyses of cooked and uncooked clover hay and corn-meal and determination of digestibility of the same. These showed that the percentage of albuminoids and fat and the relative digestibility of the albuminoids were more or less diminished by cooking. The experiments made by our experiment stations in preparing food have been mostly with pigs. At least thirteen separate series of experiments in different parts of this country have

been reported on the value of cooking or steaming food for pigs. In these cooked or steamed barley, meal, corn-meal and shorts; whole corn; potatoes, and a mixture of peas, barley, and rye have been compared with the same food uncooked (usually dry). In ten of these trials there has not only been no gain from cooking, but there has been a positive loss, *i. e.*, the amount of food required to produce a pound of gain was larger when the food was cooked than when it was fed raw, and in some cases the difference has been considerable."

Prof. Byron Tyler has some interesting theories about raw food which I quote herewith:—

"All disease is the result of disobedience of Nature's laws. It is a crime againt Nature to eat the food she provides in any other condition than that in which she provides them. Nature doer not err.

"No one can improve upon Nature, yet that's what man attempts to do when he subjects his food to the heat of fire, destroying its

vitality and changing its chemical constituents. The product of mother earth, given us for sustenance, are uncooked save by the heat of the sun—the source of all energy.

"The sun is productive of life. Fire is destructive of life.

"Cooking destroys the life cells in food—the cells which make and sustain life in man. Cook a seed thoroughly and see whether it will sprout when planted. Or graft a dead cutting to a live limb and see whether it will grow or whether it will help the growth of the live branch. All live vegetation is capable of either reproducing its own kind or of furnishing life or vitality to other organized living things; take away its life and it can do neither. Life cannot come from death.

"The man who eats cooked food subsists upon the few cells which escape destruction by fire. He is obliged, therefore, to take large quantities of food to secure the required amount of nourishment. He is surfeited with material which his system cannot appropriate—dead matter which must be gotten rid of. The

system cannot expel this waste material fast enough, and much of it ferments or decays in the stomach or intestines, furnishing food for the germs and bacilli which daily enter the system.

" The raw-food diet prolongs life. Uric acid is now recognized as one of the chief causes of old age. This poison is present to a greater or less extent in all persons who eat devitalized food, and the accumulation increases with the age of such persons. Another cause of sensibility is the presence of an oversupply of earthy salts or mineral matter in the blood and bones, this is also being produced by the eating of emasculated or lifeless food. These foreign substances ossify the bones and obstruct the blood-vessels, interfering with the exercise of vital functions and diminishing the vitality more and more.

" By natural dieting these calcareous deposits, uric acid and other poisons, are absorbed or dissolved and eliminated, and their further accumulation prevented. Thus juvenility is retained and ' old age ' warded off."

CHAPTER XIII.

COOKING OF FOODS.

To give any comprehensive information of value in reference to cooking would require a book in itself. But, I would like to call attention to the usual inclination to cook every article of food until a large portion of its nourishing, life-giving qualities are actually deorganized and destroyed. Now, no deorganized element can be used as a food. All foods for men and animals must come from either animal or vegetable life. For instance, a grain of wheat furnishes all the elements necessary to feed the body. A chemist may mix the exact chemical elements, in the same proportion, contained in this grain of wheat, but his mixture would be valueless as food.

Excessive cooking, also, so softens the food that it is swallowed without mastication, and the injurious effects of such a practice has been described at length in a previous chapter. A

food should be cooked only so long as is necessary to bring out its richest flavor. It should never be allowed to assume the consistency of mush. Foods of this character are of little value to nourish the body, as they are hurriedly bolted, and but a small proportion is ever taken up by the absorbent glands as it passes through the alimentary canal. I am aware that almost every one desires his food so tender that it will "melt in his mouth," but, unfortunately for those who always insist on eating such mushy foods, teeth were made to use, and not only does the retainment of teeth depend upon the amount of service they get, but the general health depends almost to an equal extent, upon their use. Bad teeth—bad health. They are nearly always companions. Use your teeth properly and you preserve not only the teeth, but the body as well.

There is but little, if any, danger in eating foods not sufficiently cooked, provided the necessity for thorough mastication is not overlooked. For, mastication, if sufficiently prolonged, can actually be made to take the place

of cooking. The changes that take place in food during the process of prolonged mastication are very similar to those brought about by cooking.

Another grave fault in cooking is the habit of boiling out all the flavor of vegetables in the process. When cooking vegetables only use sufficient water to avoid burning; never so much that it will be necessary to pour off a quantity when the food is ready to serve. With this water that is poured off, usually goes not only the best flavor of the food, but the vegetable salts also. These saline elements that are a part of all vegetable life, are usually absorbed, or dissolved in this liquid, and a much larger quantity of mineral salts—which many hygienists claim cannot become a part of the body,—are required to give the food the proper flavor.

Fried foods, too, are almost universally condemned by hygienic experts, and though the theory on which they base their conclusions appears sound, I have never in my experience found that wholesome foods, when fried, were any more difficult to digest than when cooked

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CHAPTER XIV.

HEALTH FOODS.

There are numerous preparations on the market that are advertised as health foods, and claims of the most extravagant character in reference to their nourishing, strength-giving qualities, are made by many of their manufacturers. Undoubtedly some of these foods deserve commendation, but according to the statements of the manufacturers, the principal value of the great majority lies in the ease with which they may be digested. They claim that the process of preparing these foods has done a part of the work of digestion, that the nourishment which they contain is more easily appropriated by the absorbent glands because of these special preparations.

The various organs of digestion were made to perform their particular office, and digestion can no more be strengthened by these so-called "health foods," that are usually cooked until

a large part of the life-giving qualities are destroyed, than a weak arm can be strengthened by carefully avoiding every opportunity to use it. As a rule the less preparation that these foods have undergone the better they are as foods. In fact, if you were to take the whole grain of most any one of the cereals such as wheat, corn, rye, oats, etc., and grind into a flour for bread or break up like cracked wheat for a breakfast food, they would be far superior to the average "health food" in nourishing and general strengthening qualities. Man may try ever so hard to improve upon Nature, but there is where his efforts will always be marked by failure. The more simple the method in preparing food, the more valuable it will be as food. Of course, simple food of this character is not as appetizing when first placed in the mouth, as when highly seasoned, or put through a prolonged cooking process; but, if mastication is properly done,—that is, continued for a sufficient length of time,—the delicacy of the flavor at the conclusion of mastication, when the food is ready to swallow, will

be far superior to that which can be obtained from the same food by high seasoning or prolonged cooking. Furthermore, such a condition of the appetite where it depends upon this character of food is not normal, and it can not always be depended upon to indicate when sufficient has been eaten. At any rate, the degree of enjoyment that can be secured from any food substance depends altogether upon comparison, and upon how hungry one may be. You may sit down to the most sumptuous meal that ever man tasted, and it will not be enjoyed if the appetite is lacking, but if sufficiently hungry a meal of raw turnips would taste like "food for the gods."

There are some digestive ailments where these partly digested "health foods" may be of value as a temporary aid, but they should never be depended upon as a permanent diet. Where this is done the result in nearly every case will be far from satisfactory. If the stomach is weak and unable to digest more hardy foods, let it rest for a time and it will soon accumulate enough strength to digest

whatever is needed to nourish the body. The only true health foods are those furnished by Nature, and if you adhere to them in all their natural simplicity, and refrain from eating beyond your power to digest, there will be no occasion for any one to search for other means of nourishment.

CHAPTER XV.

FOOD AND OCCUPATION.

Food is used to repair the waste and worn-out elements of the body. The occupation to a very great extent influences the character of these needed elements, and though the food we eat should be determined first by the normal appetite, a diet rich in the elements mostly needed to perform the daily work should always be supplied. One who works hard at manual labor all day will require far more of the muscle-making, and also of the heating foods than a brain worker. The heating foods are the source of all power in the body, just the same as fire is the source of power in an engine, and the nitrogenous, muscle-making foods repair the waste of the muscles which furnish the means by which these heating foods produce their results. Neither would be capable of accomplishing anything without the aid of the other, no more than would an engine if not in-

fluenced by heat under its boiler. One would starve to death with just as much certainty and just as speedily, and in some cases more speedily, if furnished exclusively with foods containing only one of these elements, as he would if totally fasting.

If no food is taken the body feeds upon itself until the skeleton condition is produced and the elements are supplied in proper proportion, but Nature has made no provision for properly nourishing a body fed on a partial food, for the reason that there are no partial foods in Nature. Partial foods are all man-made. Though the chemical constituents of foods furnished by Nature vary quite widely, there are none that do not contain a certain amount of every necessary element, enough at least to sustain life if such a necessity occurred. If being fed on a partial food the body does not seem able to find within itself the element not furnished in the food, and in many cases under such conditions death would ensue as quickly as when totally fasting.

One eminent authority maintains that a brain

worker needs more food than the muscle worker or manual laborer. Such conclusions would be difficult to verify. It is well known that laborers eat and can digest far more than the brain worker, and in consideration of the fact that a manual worker keeps in active use the three-fourths of his body represented by his muscular system, while the brain worker uses only that small portion represented by his brains, it is difficult to see how the brain worker would call for as much energy or break down as much tissue as the muscle worker.

The brain worker's principal needs are fattening foods to keep up the heat of the body, and to furnish the needed mental energy, and muscle-making nitrogenous foods to repair or replace the worn-out brain cells and furnish the digestive fluid. The manual worker's principal needs are fattening foods to maintain the heat of the body and to furnish the needed muscular energy, and a large amount of muscle-making foods to repair the waste of the active muscular system and to furnish the digestive fluids. Therefore it can be readily seen that the manual

worker's food should contain a larger percentage of muscle-making foods than that of the brain worker, and as he is undoubtedly exerting more energy than the brain worker he consequently requires a larger supply of fattening foods though the appetite is the only guide as to quantity. In fact the appetite of both the brain and manual worker, if made normal, will always clearly indicate which foods are mostly needed to nourish the body.

It is the deficiency of certain elements in the fluids of the body that create an appetite and the foods that supply these elements the most liberally are naturally enjoyed the most, if the normal appetite has not been dulled by poisonous liquors or gourmandizing.

Such foods as peas, beans, lentils and lean meats would furnish the muscle worker with the elements needed to nourish his body and repair the waste. While rice, potatoes, whole wheat bread and foods of like nature would be more applicable to the brain worker's needs.

Though a long list of tables might easily be used here to illustrate quality and character of

foods needed by different individuals under different circumstances, they would be of but slight and perhaps of no value to the average reader in determining his own daily needs.

As stated before, in a previous chapter, food is of no value, regardless of how nourishing it may be, unless it can be eaten with appetite. Therefore the normal appetite is the guide that can be depended upon in all the varying conditions, both as to elements and as to the quantity needed.

Each reader should carefully study the chemical analysis of various foods and should see that his table is supplied with a variety of those foods which he likes and which contain a liberal supply of the elements that are needed to nourish his body.

If this duty is performed his appetite "will do the rest." He can then simply eat what he likes best, and can eat until this appetite is satisfied—not all he can.

If the appetite is not normal, if it does not dictate clearly as to character and quality of food needed, there is but one remedy and that

is to fast until it designates by an unmistakable desire just exactly what is needed. That is the only infallible means of developing a normal appetite, and after having taken the trouble to develop this normal appetite, you should keep it normal by abstaining from liquors and other stimulants, and also avoid overeating, or eating without appetite as you would a poison.

CHAPTER XVI.

FOOD AND TEMPERATURE.

The needs of the body vary greatly in different temperatures. In the far north all carbonaceous foods, fats, etc., are greatly relished, while in torrid countries, fruits, vegetables, and lighter foods are more in demand. The most delectable morsel to a young Esquimaux is an ordinary tallow candle. He will eat it with joy the most intense. It is to him like candy to the ordinary child. This difference in taste is simply evidence of the varying needs of the body under different climatic conditions. Inhabitants of cold countries need large quantities of fattening food to maintain the heat of the body; while in the torrid zone, where the temperature of the air is nearly equal to the temperature of the body, the only use for fattening foods is to supply the energy that may be needed in play or work. It would be well, therefore, for those who reside in the temperate

zones, where the temperatures of the different seasons vary sometimes more than a hundred degrees Fahrenheit, to give some attention to the necessity for changing the diet with the different seasons.

Many apparently intelligent persons eat exactly the same articles of diet throughout the entire year. The necessity for changing with temperature never seems to be fully realized. Of course, where there is always a large variety of foods to choose from no particular suffering is entailed if the appetite is entirely normal, but if the needs of the body, required in the different seasons, were understood and supplied, excessive cold or excessive warmth would produce no discomfort worthy of notice.

Not so much suffering is entailed in winter because of this ignorance as in summer. During cold weather, if one is exposed to the cold, very much, the appetite simply demands more carbonaceous foods, and more is eaten. But during the intense heat of the summer, the appetite invariably falls far below par, and the average person sees in this a sign of coming

weakness; and, instead of obeying the plain dictates of instinct, he or she usually searches for some means of goading the appetite up to the usual demands, and vastly increases the suffering, not only from the heat, but often from other troubles more serious, all caused by this extra nourishment that the digestive organs cannot properly appropriate.

The diet in warm weather should always be extremely light, unless one is performing hard manual work. It should consist mostly of bread, salads, vegetables and fruit. It would be far better to avoid meat, though the lighter meats, such as chicken and fish are not so objectionable as beef, mutton, etc. One full meal each day should be sufficient for summer, at least, though if it is impossible to confine your self to this let the other meal or meals consist of light lunches, and the lighter the better.

The importance of retaining the keenness and acuteness of taste is nowhere more fittingly emphasized than by the fickleness of the appetite as influenced by temperature. The needs of the body are plainly indicated by this sense, and

if it is acquired and retained in all its delicacy and acuteness, the food mostly need in all conditions of heat or cold will be plainly indicated.

Meats and all food rich in fats and starch can be more easily assimilated in the winter than during the summer. There is not only an increased demand for fattening foods to furnish heat for the body, but usually one expends more energy, and this consumes increased quantities of these same food elements, and, in addition, requires an increase in the elements that supply the waste of the muscular tissue.

CHAPTER XVII.

ALCOHOLIC LIQUORS.

Alcohol in any form is not allowable if the diet is to be confined to those foods that build strength. It may stimulate, and does, unquestionably at times buoy one with a feeling of false strength, but true strength and endurance—the power to continue on and on for any length of time—can never be gained unless alcoholic liquors be avoided absolutely. On one occasion I heard the following excuse for the use of alcohol: "For a number of years I was a sufferer from digestive troubles, I tried everything without benefit. I was in misery half the time. Finally I was advised to make a habit of drinking beer or wine at my meals, and whenever I had that uncomfortable feeling in the region of the stomach I followed this advice and it cured me of my troubles." This man was plainly suffering from overeating. His digestive organs were continually called

upon to work beyond their need or capacity. The use of alcoholic drinks under such circumstances will remedy such troubles temporarily for the organs make every possible effort to rid themselves of alcohol immediately upon its introduction into the stomach, and the undigested food that may be there is naturally hurried along because of these extraordinary efforts. If one cannot restrain his appetite, if he will persist in eating more than his stomach can digest, it is really a question whether he is not the gainer for the time being by moderate indulgence in mild alcoholic stimulation to help force the food along, for overeating is by far the greater sin of the two, it kills twenty-five where alcohol kills one person, and its victims can be found in every household.

"The aristocratic toper, who wishes to give an air of respectability to his vice, will claim that alcohol is a food. He will cite, in proof, instances in which persons have lived for weeks by the aid of no other nutriment, taking nothing but alcohol and water. This semblance of argument scarcely needs expo-

sure; for the most that can be claimed is that it proves merely that persons have lived several weeks while taking only alcohol and water. The fact that individuals have in several instances been known to live from thirty to sixty days while taking only water, shows conclusively that those persons who lived a shorter time on brandy and water lived in spite of the alcohol instead of by the aid of it. A conclusive evidence that alcohol is not a food is found in the fact that when taken into the system it undergoes no change. It is alcohol in the brain, in the liver, in all the tissues, and alcohol in the breath, in the perspiration, and in all the excretions. In short, alcohol is not used in the body, but leaves it, as it enters, a rank poison. I can no more accept them as food than I can chloroform or ether. In experiments made by the writer and reported in a paper read before the American Medical Temperance Association, it was shown that the total strength of a healthy young man was diminished $33^{1}/_{3}$ per cent. as the result of taking four ounces of whisky. The total falling off was diminished

in a notable degree. It was noticed that the loss of strength in the legs was much greater in proportion than in other parts of the body." —*J. H. Kellogg, M.D.*

I have never during my entire life had an occasion to use alcohol and I never expect to have. It is a stimulant and a poison. No one can gain permanent strength from it. It retards the elimination of waste matter from the body, and the tissues are often filled with impurities that are liable at any time to become manifested in some virulent disease.

"It is assumed by most persons that alcohol gives strength, and we hear feeble persons saying daily that they are being 'kept up by stimulants.' This means actually that they are being kept down; but the sensation they derive from the immediate action of the stimulant deceives them and leads them to attribute passing good to what, in the large majority of cases, is persistent evil. The evidence is all perfect that alcohol gives no potential power to brain or muscle. During the first stage of its action it may enable a wearied or feeble organism to

do brisk work for a short time; it may make the mind briefly brilliant; it may excite muscles to quick action; but, it does nothing substantially, and fills up nothing it has destroyed, as it leads to destruction. A fire makes a brilliant sight, but leaves a desolation. It is the same with alcohol."—*Dr. Richardson.*

It dulls the keen sensitiveness of the nervous system. The statement is often made that alcohol brings out a man's animal nature, but they really mean that it brings out all his lowest tendencies, for no lower animal under any circumstances, could become so depraved as one who is under the influence of the poison. A reeling, drunken fool, is about the most disgusting object that the human mind can possibly conceive. A hog becomes a decent, clean animal when compared to such vile specimens of humanity.

Prof. Janeway, M.D., professor of materia medica in Bellevue Medical College, stated in a lecture before his class that alcohol does not assist those who use it to endure cold. In proof of the assertion, he related the following

incident, which was given to him by the first gentleman mentioned in the account: "A gentleman was appointed by the government to go on a survey in the Eastern States in the depth of a severe winter. He chose for his assistants men who were total abstainers. At the same time, another party set out upon the same business, the members of which were addicted to the use of whisky. Only one of the first party gave out, while nearly every one of the whisky drinkers succumbed to the influence of cold."

Every human being admires strength and desires to acquire all he can and when this one fact is considered it becomes extremely difficult to understand how any one can continue to burn out his internal organs with these liquid poisons. It has been proven conclusively again and again that alcohol of all kinds lessens the muscular vigor. Did you ever hear of an athlete training for a contest with alcohol of any kind as a part of his diet? Even the most ignorant know enough to avoid it absolutely when they desire to obtain the highest degree

of physical health. A man who drinks liquors is only a part of man. He goes through the world not only with his brain clouded and benumbed, but his every physical function is weakened and blunted. He misses entirely the complete powers that might easily have been possessed.

"Close upon the derangement of the stomach, which is certain to come sooner or later with all drinkers, follows nearly every other functional disease possible to the human system. Every organ is disturbed. The whole vital machinery is deranged. Strange noises are heard in the head occasioned by the rushing of the hot torrent of poisoned blood through the distended blood-vessels of the head, which pass near the ear. Black spots and cobweb appearances annoy the sight. Alcoholic amaurosis or amblyopia comes on, and sight becomes impaired; sometimes blindness follows. The dilated blood-vessels of the skin become permanently enlarged, especially in the face and nose, and the drinker gets a rum blossom. Skin diseases of various sorts are likely

to appear, particularly eczema of the fingers or toes, or on the shins. An unquenchable thirst seems to be ever consuming the blood, and nothing but alcohol will even temporarily assuage the desire for drink. Notwithstanding, large quantities of fluids will be taken, often amounting to several quarts a day, which overwork the excreting organs. The liver and kidneys are disturbed in their function, one day being almost totally inactive through congestion, and the next rallying to their work and doing double duty. Every organ feels the effect of the abuse through indulgence in alcohol, and no function, through long continuance of the disturbance, induces tissue change. The imperfectly repaired organs suffer more and more in structure until the most extensive and disastrous changes have taken place. Dr. Willard Parker of New York shows from statistics that for every ten temperate persons who die between the ages of twenty-one and thirty, fifty-one intemperate persons die. Notwithstanding the constant protest of both moderate and immoderate drinkers that alcohol does not

harm them, that it is a necessary stimulus, a preventive of fevers, colds, consumption, etc., and the assertion of certain scientists that it is a conservative agent, preventing waste and so prolonging life, the distinguished English actuary, Mr. Neison, has shown from statistical data which cannot be controverted, that while the temperate man has at twenty years of age an average chance of living forty-four and one-fifth years, the drinking man has a prospect of only fifteen and one-half years of life. At thirty years of age the temperate man may expect to live thirty-six and one-half years, while the dram drinker will be pretty certain to die in less than fourteen years.

"When mingled with the blood, alcohol destroys the blood-corpuscles, increases the proportion of fat, renders the blood less capable of passing readily through the capillaries, coagulates the fibrine, and injures the nutrient elements of the plasma of the blood. When a considerable quantity of alcohol is taken, the distinction between venous and arterial blood is almost destroyed, all the blood assuming a

dark hue. It was thus that the English nobility, through habits of dissipation, became distinguished for their blue blood, which was by them considered an evidence of noble origin."—*J. H. Kellogg, M.D.*

James Miller, in his work on Alcohol, says, "Alcohol to the working human frame is as a pin to the wick of an oil lamp. With this you raise the wick from time to time, and each raising may be followed by a burst of brighter flame; but, while you give neither cotton nor oil, the existing supply of both is, through such pin-work, all the more speedily consumed."

Although you can point to men who have made a success of life notwithstanding their regular indulgence in the liquor habit, such men could have risen to far greater height, could have accomplished far more, had they not been handicapped by such false stimulation.

And you can also point to men who can only do their best, most brilliant work when partly under the influence of a stimulant, but this only proves how much the habit has enslaved

them. The same inspiration, made many times more keen and clear could be produced by normal conditions, by creating that feeling of superb health which awakes every nerve to the full realization of the joy of life and health.

CHAPTER XVIII.

DRINKING AT MEALS.

Unquestionably, the habit of drinking at meals should be most severely condemned. If the food is being properly masticated there is never desire for liquid of any kind. It is only when food is hurriedly bolted that such a desire is manifested. A most pernicious and quite frequently practised habit, is that of taking a morsel of food, chewing it two or three times, then taking a swallow of coffee or tea to "wash it down." No human being can remain healthy any length of time if such a habit is regularly indulged. The food is not only improperly masticated, but it enters the stomach accompanied and diluted by this pernicious liquid, and digestion under these conditions is naturally carried on in a very unsatisfactory manner. How such persons are able to maintain even an occasional semblance of health is beyond the comprehension of the writer.

It is all right to drink to satisfy an actual craving—to quench thirst—but never under any circumstances can the habit of drinking to "Wash down" improperly masticated food be excused. It outrages every natural instinct, every function of the alimentary canal. If you are abusing your stomach in this manner it should be the first evil to eradicate in your efforts towards eating for strength.

One may drink during a meal if an actual thirst exists, though many hygienic authorities even condemn this, as the liquid naturally dilutes the gastric juice and may lessen its digestive power. This is more especially true if the drink is cold. Under these circumstances the temperature of the contents of the stomach is greatly lowered, and the process of digestion and absorption ceases absolutely until the temperature again becomes normal.

Extremely hot drinks are also baneful in their effects. They relax and weaken muscular walls of the stomach and also influence adversely the flow of the gastric juice. Not only is this important digestive fluid lessened in

strength, but the saliva does not flow so freely, even during the short period that the food is being masticated, when hot drinks are used frequently.

If your appetite is in a condition to thoroughly enjoy a meal, if taste has prepared you for the pleasures connected with satisfying a strong normal desire for food, there will be no necessity for liquids during this meal if you masticate every morsel until it has actually become a liquid. Under these conditions it is usually some time after a meal before any desire for liquid becomes evident, and if not engaged in some occupation requiring considerable muscular activity, and if the temperature is not so high as to require considerable evaporation to maintain the body at a proper degree of coolness, there may be no desire for water even then.

CHAPTER XIX.

ICE WATER.

Though tea and coffee are undoubtedly baneful in their effects, the ice-water habit, now almost universal in America, is the cause of much physical weakness and disease. True, many persons seem to imbibe large quantities daily without apparent serious injury, but the possession of a modicum of brains should enable any one to clearly see that the introduction into the stomach of an ice-cold liquid that is from sixty to sixty-eight degrees colder than this organ could not have otherwise than a weakening influence.

Here again, with these iced drinks, is the evidence of instinct to prove beyond question that they were never intended for the human stomach. Give a child, for the first time a drink of ice-cold water and see its effects. I will never forget the first time, to my knowledge, that I tasted ice water. I had been ac-

customed to drinking water about the temperature of well and spring water and, as I was quite thirsty at the time, I began to swallow this iced water with the same celerity usual with other water. Two or three swallows, however, were sufficient. It seemed to me at that time as though I was actually pouring ice down my throat—it seemed to actually paralyze throat and stomach. Of course, in travelling you have to drink ice water or else take a great deal of trouble to secure something else, and time and time again when intense thirst induced me to drink iced water soon after a meal I have actually felt the organs of digestion immediately cease their work, and a decidedly uncomfortable feeling would remain for some time as a result.

There is no question as to the desirability of cool water. It should be of the temperature usually found in wells and springs, but never colder. If only the two extremes are furnished—that is, iced water and the warm water that often flows from the water pipes of a city, mix them until of a desired temperature.

You will be amply repaid in increased health for the trouble this may occasion.

If conditions are such that your water supply is too warm to furnish a pleasant drink, it can usually be cooled to a satisfactory temperature by the following method: Fill a vessel of some kind with water; wrap a wet cloth around it, covering every part of the surface. Now put it in some place sheltered from the sun where there is air stirring. Be sure that the cloth is kept wet. The process of evaporation cools the cloth and the water in the vessel gradually assumes a similar temperature.

Much nonsense is often heard about the necessity for ice in very warm weather; but very few country homes are supplied with it and the savage inhabitants of torrid countries seem to thrive without it. In fact about the only occasion for the use of ice in summer is to preserve foods like meats, butter, etc., that should become no part of the diet of an intelligent human being at this heated season of the year.

CHAPTER XX.

COFFEE AND TEA.

Coffee and tea are supposed by many to contain nourishing elements, that actually give strength to the body. They strengthen just as does whisky, beer and other alcoholic beverages. They are stimulants, pure and simple. The only food they contain is the sugar and cream that are usually mixed with them to hide their real favor. In fact the same natural test that can be used for all liquids, or foods, to determine their value as a food, can be applied to tea and coffee. Every natural wholesome food has a pleasant flavor, the very first time it is tasted by a child or adult in perfectly normal health, barring occasional peculiarities manifested by taste in certain persons. To the entirely normal throat and mouth whisky burns just as would fire if swallowed, and coffee or tea, if the real flavor is not disguised by sugar and cream, has a bitter, acrid taste that no

one could possibly endure the second time if it were not for the bad influence of others who have acquired the habit.

"We thoroughly believe that more harm is done at the present time by tobacco, tea, and coffee, than by all forms of alcoholic drinks combined; and we deem it of the greatest importance that the efforts of temperance workers, should be turned in this direction."—*J. H. Kellogg, M.D.*

Many who preach temperance, as applied to alcoholic liquors, are as much slaves to the coffee or tea habit as others are to the poisonous alcoholic liquors; and, though tea and coffee do not manifest their evil effects so plainly, many victims of these mild stimulants do themselves as much injury in the end as the alcohol tippler.

Tea is especially bad as the large amount of tannin, a virulent poison, which it contains has a peculiarly stimulating, brightening effect for a time after its use, though, like the alcohol stimulant, the depressing after-effects, when the stimulating influence has disappeared,

are marked. Again, like alcohol the quantity used must be gradually increased to secure the same effects, thus it is not at all uncommon to find some tea topers who have gradually increased their indulgence until they are drinking four to five cups each meal. The injurious effects of such intemperance will soon become apparent in every case. Of course, those whose vital strength is very great may be able to continue the habit for years without any serious results, beyond occasional periods of illness, but they are paying the price for their indulgence, and gradually, with as much certainty as day follows night, the "cup that cheers" will become the cup that inebriates.

Coffee, though not so injurious as tea, contains poisonous elements that have an unfavorable influence upon the body if its use is long continued. Notice the yellow skin of those who have been for a long time addicted to the coffee habit. It is often the sole cause of biliousness, and troubles of this nature have been known to disappear almost immediately after the abandonment of the habit.

" The evil effects of the use of these popular beverages have made too evident their injurious character to allow of room to doubt their deleterious influence, notwithstanding the apologies offered for their use by those who are accustomed to employ them.

" By the experiments of Dr. Smith, M. Gazear and many others it is shown that the consumption of the body is greater under the influence of tea or coffee than at other times, since the amount of carbonic acid eliminated is greater than natural, the amount of carbonic acid sent out from the lungs being the best known measure of the rate of waste of the body. The amount of extra waste thus occasioned is shown by Dr. Smith's experiments to be from one-fourth to one-tenth that of the whole waste of the body, whence Dr. Smith very consistently remarks that it is specially adapted to 'those who usually eat too much.' This is a tacit confession that at the least the use of tea is an expensive and wasteful habit.

" When taken upon an empty stomach, these

beverages produce, as is well known, serious irritation of the digestive organs. When taken with the food, impairment of digestion is produced in several ways: (*a*) By taking into the stomach too large a quantity of liquid. (*b*) By relaxing the stomach by the use of liquids of too high a temperature, by which, also, the activity of the gastric juice is impaired. (*c*) By precipitating the pepsin with the tannin which they contain.

"That the use of tea and coffee is a common cause of dyspepsia is an observation made by all experienced physicians. At the last meeting of the British Medical Association, an eminent physician from Australia testified that dyspepsia from the use of tea and coffee is very common in that country. Sir William Robert has shown that both tea and coffee, even in small proportions, prevent the action of saliva upon starch, thus producing one of the most common forms of indigestion. The writer has demonstrated the correctness of these observations, both by experiment and clinically, having recorded a great number of cases in which

grave disorders of digestion were evidently due to the use of tea and coffee.

"It is well known that whatever excites vital action above the normal standard, without supplying an extra amount of force to support the extra expenditure, invariably produces, as a secondary result, depression of vital action below the normal standard, or what is known as a reaction. That this is one of the secondary effects of the use of strong tea, is well known. Tea may be used so weak that the reaction is not noticed, but no doubt it is still felt in some degree by the organic system, if not by the nerves of animal life. This continued alternation of excitement and reaction must certainly result in injury to the nervous system, increasing the liability to nervous diseases of a functional character, such as neuralgia (neurasthenia), hysteria, etc."—*J. H. Kellogg, M.D.*

Both the tea and coffee habits can be easily discarded if the victim cares to make the required efforts. The principal attraction in both tea and coffee lies in the fact that they are warm, they increase the temperature of the

contents of the stomach, and often enable one to obtain greater pleasure from eating, and to digest their meals with less noticeable signs of distress. Though there are some diseased conditions of the stomach when a hot drink can be advantageously recommended it should be taken a few minutes before a meal or an hour or two afterward. As stated in a previous chapter, if eating wholesome foods only, and thoroughly masticating them, there should be no desire for a drink either during or immediately after a meal; though, do not forget that if an actual, unmistakable thirst exists, I believe it is better to partially satisfy it.

After you have determined that you desire to break off from the tea or coffee habit, and there is but little use of making any effort in this direction unless there is some real seriousness in your desire, begin first by gradually day by day lessening the strength of the decoction and also the quantity. If these instructions are carried out carefully you will find yourself entirely free from the habit without the slightest craving for it in a short time.

Of course, after the strength of liquid has been greatly reduced you can then resort to some wholesome warm drink as a substitute. Hot water with cream and sugar to taste, is used with advantage by many. Gradually, however, the necessity for this should disappear and the quantity used should gradually grow less until you find that it can be discarded altogether.

Any of these habits, can of course, be dropped immediately with greater benefit, without this "tapering off" process, if the will is sufficiently strong, though when this is done there usually follows digestive and general functional disturbances that often make life rather uncomfortable for a few days.

CHAPTER XXI.

THE WHITE-BREAD CURSE.

White bread, the American "staff of life," is the greatest humbug ever foisted upon a civilized people. "Staff of life," indeed! Why, it is more like a staff of death. It is composed largely of the starchy part of the wheat. It is greatly deficient in the constituents essential in feeding the muscles, brain and bones. A large part of these valuable food elements have been removed, with the bran and shorts. But, astounding as it may seem to a reasoning human being, this article of food is consumed from one end of the country to the other, and everywhere is looked upon as "the staff of life."

"What, in heaven's name, are our public schools for? There is, absolutely, no excuse for such depraved ignorance. All scientific investigators agree as to the inferiority of white flour as a food. The teeth fall out, the

bones soften and the muscles never develop if it is depended upon to furnish nourishment for the body.

"The gluten of cereal foods is their nitrogenized element, the element on which depends their life-sustaining value, and this element is, in the white and *foolishly fashionable* flour, almost entirely removed, while the starch, the inferior element, is left behind and constitutes the entire bulk and inferior nutriment of such flours. To use flour from which the gluten has been removed, is *almost criminal."—Dr. Cutter of Harvard University in the American Medical Weekly.*

No wonder some children never grow, and are always sick and weak! When fed on such a starvation diet as this nothing else could be expected.

The use of this one article of diet has caused thousands to suffer with digestive troubles. It is especially favorable to constipation, and is frequently the sole cause of this annoying trouble.

A grain of wheat contains the elements nec-

essary to feed the body, in almost perfect proportions, and if foods were made of whole-wheat flour the body would be perfectly nourished in every part.

Every man who knows anything of foods and their properties is fully aware of these facts, and why medical men everywhere ignore them in advising their patients is beyond the comprehension of the writer.

Not long ago, an experiment was made with dogs. Some were fed on white bread, others on Graham or entire wheat bread, and still others were given nothing to eat. The dogs that were allowed no food lived about as long as those fed on white bread, while those fed on the entire wheat bread thrived, and were apparently able to maintain life until the end of its natural term. This proves beyond question that whoever is striving to subsist on white bread is starving a part of his body with almost as much certainty as if he were eating nothing at all, and that he will actually die about as soon as if fasting.

It is generally admitted by authorities that

the outside covering of the wheat grain which is removed in the refining process of making flour contains, in addition to its valuable nitrogenous elements (muscle builders), a large amount of waste matter which is of great value, not only in adding bulk to the food, but in assisting the peristaltic action of the bowels. Most persons suffering from constipation find that the trouble immediately disappears when entire wheat bread is substituted for white bread.

The most ignorant athlete usually has intelligence enough to know that white bread is an inferior food, that it will not furnish the elements in proper proportion to feed the body, and any one who has trained or who has followed an occupation requiring great muscular activity, and has had an opportunity to test white flour as a food in comparison with whole or entire wheat, will also immediately indorse this conclusion.

"Superfine flour is distinctly a modern invention. The ancients used unbolted meal altogether, the present disease-producing devices

known as bolting machines being then not in use. Indeed, many nations at the present day, as the Germans, Scandinavians, and, in fact, most nations with the exception of the French, English, and American nations, still adhere substantially to the ancient custom in this regard. No doubt the hardihood of the native German peasant is in great part justly attributable to the highly nourishing qualities of his 'Black bread.'"—*J. H. Kellogg, M.D.*

I will never forget the first time in my life that occasion occurred to prove to my own satisfaction by actual personal tests the great inferiority of white-flour bread as a food. When quite young I concluded that life on a farm would strengthen my then greatly weakened body, and I visited a farming section in one of the Western States, and secured a "job" as a farm hand, or rather farmer's boy, as I was not considered equal in strength to be a full-fledged "hand."

Now, in this particular section the previous generation had been mostly "raised" on corn bread and bacon, and they felt somewhat above

such a rough fare, so the ignoramuses substituted white for the corn bread. I had a little knowledge of food values, even at that early age, and if milk had not been plentifully supplied, am satisfied that I could not have subsisted on the food furnished. But during this particular time I had the opportunity, far from pleasant, I can assure the reader, of seeing and feeling my muscular strength increase and decrease, as influenced by the diet. As I came there for the particular purpose of acquiring strength, I had naturally formed a habit of almost daily testing my strength in various ways.

About once or twice each week, at the noon meal, they would have baked beans and corn bread, and within an hour after such a meal, following several days wherein white bread was the principal article of diet, I would actually be a third stronger. Not only was I greatly increased in strength, as I found by actual tests, but my energies seemed to vastly increase. While compelled to subsist mostly on the white-bread diet I dragged through my work—felt listless and half ill all the time. But

one meal that contained Nature's true nourishment transformed me into a new being.

Of course, where fresh meats are furnished with white bread, its deficiency is not so greatly noticed, as the meats, to a certain extent, supply the elements that the white bread lacks.

But the most astonishing and incontrovertible proof of the terrible deficiency of white bread as a food was startlingly illustrated by those very people in that section. A poorer lot of men, physically, I never saw before nor since. They had no stamina, vigor, or beauty of body. And the women! Why, at 25 they would begin to fade; at 30 they were old. Before 30 a majority of them had to be supplied with false teeth.

And why?

They were practically living an ideal life, in pure air, with plenty of exercise, and the natural conditions were in every way such that they should have produced the highest types of manhood and womanhood, physically.

The cause of their utter physical ugliness, weakness and general inferiority was unques-

tionably due largely to the diet of white bread, and at this present moment I believe that white bread, in many parts of this country, is actually starving people to death wholesale. They are eating plentifully, but the tissues necessary to the performance of the vital functions are being slowly starved.

Remember that muscular power is not used solely for locomotion and movements that require the use of hands, arms, and upper parts of the outer muscular system. It is required in every digestive and vital action of the body. The heart is a muscular organ. The stomach is surrounded by muscles that help in the process of digestion. Muscular power is necessary even to turn your eyes; therefore when you starve your muscles by a white-bread diet, every organ or function of the entire body suffers in consequence and it would also be well not to forget that the same food elements which nourish the muscles also constitute the principal part of all the important digestive juices.

The chemical analyses of all foods differ so

much that it is difficult to form conclusions accurately in every detail. In order for my readers to see clearly the difference in the analysis of whole wheat and the ordinary white flour, I quote from Dr. Holbrook who gives Blythe's authority for table of analyses showing the difference. It would be well to call the attention to the great difference in the muscle-making elements contained in different kinds of wheat and in wheat grown in different parts of the country. This varies from about ten to twenty-one per cent. I have taken for granted that the whole-wheat flour, which has been here analyzed and compared with the white flour, has been made from the same kind of wheat.

Chemical analysis of whole wheat flour and white flour is as follows:

	Entire Grain Whole Wheat Flour.	Ordinary White Flour.
Water	14.0	16.5
Nitrogenous elements feeding muscles and brain, and furnish digestive juices	21.8	12.0
Fattening, heating and energy producers	60.9	70.8
Woody fibers—waste necessary to assist in digestion	1.7	....
Mineral water	1.6	0.7

CHAPTER XXII.

ELEMENTS OF FOODS.

The body, as the reader is no doubt aware, is composed of various elements, the exact proportion of which cannot be determined save by a chemical analysis. The bones are composed of lime and other mineral matter; the muscles and brain are composed of nitrogenous elements, while the fat, which is distributed everywhere throughout the body, is composed of elements carbonaceous in nature. Thus the necessity for supplying the exact elements in proper proportion to nourish the body can readily be realized. Here is where the importance of a normal appetite—natural taste—is most thoroughly emphasized. That food which is enjoyed the most keenly by taste is the most needed and, naturally, the most healthful. The sense of taste is located at the extreme end of the tongue and in the back part of the mouth. It is produced by the absorption of the food

elements that are being masticated. The faster absorption takes place, provided the food is wholesome and nourishing, the more acute is the enjoyment of taste. Absorption is influenced entirely by the condition of the body. When any element or elements are particularly needed by the body, the blood is naturally deficient in those elements; and those parts of the body—the tip of the tongue and back part of the mouth—which produce taste—are naturally able to absorb those particular elements needed more quickly than other elements, and the result is we always, if in possession of a normal appetite, enjoy eating those foods most keenly which are the most needed. It will be readily noted, therefore, that if your table is supplied with the proper variety of food, containing the various elements necessary for feeding the body, taste will indicate which food element is most needed, by selecting that which tastes most delicious. Taste cannot be relied on to do this, however, if the foods are so highly seasoned as to entirely destroy their original flavor. By studying the various

chemical analyses of foods which follow you can secure a fair idea of the value of different foods, and thus be able to select those mostly needed in your own case, keeping in mind continually the dictates of taste in your selection, for, however, poor it may be, it is usually far better than any other authority that could possibly be consulted.

I am aware that there are some foods that taste very good, but which nearly always produce baneful effects. They are exceptions to all rules, and where foods seem to disagree to such an extent they should of course be avoided. The manifestation of taste for such a food, however, is indubitable evidence that the food contains elements needed to nourish the body at that time, and other foods containing similar elements should be furnished.

Take the ravenous appetite for candy among some children, for instance. This appetite furnishes ample evidence that the body is not properly nourished in the force-producing and heating foods and if such children were furnished at the table with a plentiful supply

of foods such as rice, oats (not oatmeal), and honey, served in palatable form, there would be but little desire for candy.

"Experiments upon both animals and human beings show that it is of great importance that the proportion of elements should be such as will best meet the demands of the system, especially in the case of the albuminous and carbonaceous elements (gluten, albumen, fats, starch, and sugar). Many and extended experiments and observations have shown that the proper proportion is about one part of nitrogenous or albuminous elements to seven parts of carbonaceous elements. From this it will at once appear that most articles of food are deficient in one or the other of these classes of elements, requiring that they be supplemented by other substances eaten with them.

"By means of numerous experiments, at the expense of numberless dogs, rabbits, pigeons, cats, and other animals, it has been clearly demonstrated that while the various elements mentioned are food elements, they are not in themselves food, either when taken alone or

when artificially mixed. Dogs fed on albumen, fibrine, or gelatine—the constitutents of muscle— died in about a month. The same result followed when they were fed on the constituents of muscle artificially mixed. A goose fed on the white of egg died in twenty-six days. A duck fed on butter starved to death in three weeks, with the butter exuding from every part of its body, its feathers being saturated with fat. Dogs fed on oil, gum, and sugar, died in four to five weeks. A goose fed on gum died in sixteen days; one fed on sugar, in twenty-one days; two that had only starch lived twenty-four and twenty-seven days. Dogs fed on fine flour bread lived but fifty days."—*J. H. Kellogg, M.D.*

The analyses of the various food-products, which I have used, were taken from the bulletins of the U. S. Department of Agriculture.

CHAPTER XXIII.

MUSCLE-MAKING ELEMENTS.

Similar elements to those of which the muscles are composed, also form the cells of the brain. Therefore the importance of nitrogenous elements in the food is not confined entirely to manual workers, or those desirous of building all the attainable muscular powers—it is of almost equal importance to the brain worker. All the broken down or decayed tissues in both brain and muscle must be replaced by these nitrogenous elements. A liberal supply of these elements is especially essential in building muscular tissue. No strength of importance can be developed unless the importance of this is recognized.

These nitrogenous elements also perform really the most important part in the vital economy. Though they do not furnish the force, they furnish the means through which the force is manifested. All the important

fluids of the body are composed largely of nitrogenous elements. The saliva, gastric juice, and the bile, pancreatic and intestinal juices, which perform such important work in the digestive process, are composed mostly of nitrogenous elements.

"The experiments of Dr. Austin Flint upon the pedestrian Weston, as well as the experiments of Prof. Liebig, Subbotin, and many other distinguished physiologists, show very clearly that the nitrogenous elements are the chief supporters of vital activity, muscular and nervous effort, etc., and that food can only support vital action or give rise to force by being assimilated into living tissue."—*J. H. Kellogg, M.D.*

"The nerves, the muscles and the glands are composed of living matter or protoplasm, and cannot be built up, or the glands furnish their secretions without albuminous matter. Every structure in the body in which any form of force is manifested is mainly built up of these proteids. Muscular tissue is a good ex-

ample; the brain cells are also examples."—*Dr. M. L. Holbrook.*

The principal foods that are richest in these valuable nitrogenous muscle-making elements are beans, peas, lentils, lean meat and eggs, though if wheat (the whole grain in bread or other food substances), oats and corn are also well supplied one will not have starved muscles.

Although lean meats are especially rich in nitrogenous elements, they are not by any means essential in a muscle-building diet. The muscles can unquestionably be developed to their highest degree of perfection on a grain, fruit and vegetable diet, if the grain, so rich in these vital building elements, are furnished in palatable forms. Many vigorous farmers in our own country, and whole nations of people such as the Japanese and natives of India, exemplify the truth of this statement.

In the analyses which follow, to all nitrogenous elements I have added the word "muscle," though it would be well to note that all brain-cells and important fluids of the

body are composed largely of these elements. Do not make the mistake of believing that one can be made strong by merely eating muscle-making foods. The absorption of these muscle-making elements requires that a demand first be made for them by the use of the voluntary muscles, therefore if you wish to develop strength, you must first develop an appetite for strengthening foods by the vigorous use of your muscular system.

In order to emphasize the particular necessity for muscular vigor in the performance of the digestive processes, I would call your attention to some comments by a well known authority on the muscular processes of the organs of digestion:

"Muscular action masticates the food—by the aid of the passive accessory organs, the teeth—and mingles with it the saliva. Muscular contraction draws the alimentary bolus from the mouth down into the stomach. Here, by the action of the muscles, it is churned up with the gastric juice, and finally squeezed through the pylorus into the small intestine,

where, by the aid of muscles, it is mixed with the bile and the pancreatic and intestinal juices, and is moved along, constantly coming in contact with fresh secreting and absorbing surfaces, until its digestion is complete. Even absorption is greatly aided by this muscular action, as the circulation in the absorbing parts is thereby quickened, so that larger quantities of fluid are taken up."—*J. H. Kellogg, M.D.*

CHAPTER XXIV.

FATTENING ELEMENTS.

The carbonaceous foods furnish the elements that produce fat. The human body, and in fact, the bodies of all animals, are from one standpoint only storage batteries. In an electric battery the power stored is electricity. The element of power that can be stored in the body is fat. Fat is to an animal body, human or otherwise, what electricity is to a storage battery. It is nothing more than stored up power. A person overburdened with fat has no excuse for being hungry for foods of a fattening nature. In fact it is really doubtful if he has any excuse for being hungry at all, for when a large amount of fat has accumulated, in nearly every case such a person could fast for several weeks with actual benefit to body and mind. The bear accumulates enough fat in the summer to enable him to go without food all winter, and any animal by acquiring similar fast-

ing habits could perform similar feats of fasting.

All fattening foods produce energy and maintain the body at a proper temperature. Whenever these foods are supplied beyond the actual needs of the body, under perfectly normal conditions, a large amount of the surplus is deposited in the form of fat. A certain amount of fat is healthful and is useful to round out to greater symmetry all parts of the body, but when it is allowed to accumulate beyond this, it produces in time a weakened condition that causes the body to become easy prey for all sorts of diseases. Every effort of brain or muscle consumes a certain amount of fat in the blood.

Under the head of "Starch, Fat, Etc.," I have included with fat, all starch, sugar, and food elements of this character. As I consider that the fiber performs an important purpose in assisting towards the proper digestion of foods I have given a little more importance to this particular element than have the Agriculture Department in the original analyses.

CHAPTER XXV.

MINERAL ELEMENTS.

The importance of mineral matter which has been vitalized by vegetable life, in our food, is about equal to the other elements.

"The principle was established long ago that animals cannot organize or vitalize matter, but simply possess the power to appropriate nourishment in the form of a substance which has already been vitalized by the vegetable kingdom."—*J. H. Kellogg, M.D.*

But a very small percentage of these elements are required, as will be noted by the analysis of wheat, the perfect food; but the effect of this small amount upon the human body seems to be of very great importance, as will be noted by a perusal of the following:

"Professor Forster of München has made a large number of experiments to discover the importance of mineral matter in our food. Two pigeons were taken for one experiment and fed

on food containing every other requisite: albumen, carbohydrates, etc., but entirely freed from all mineral matter. These pigeons took their food regularly, but soon lost all liveliness and sat dumb and motionless on the bars of their cages. After the tenth day they ate but little and lost in flesh. On the twenty-fourth day one of them had a fit, and both refused to eat. He then fed them by compulsion. One died on the twenty-sixth day by a return of the fit, and the other lived on to the thirty-first day, when it also had a fit from which it did not recover. An examination of the bodies of the pigeons revealed no traces of any disturbance of digestion.

"He then took a dog and fed him in the same manner. He soon showed signs of weariness, lay sad and dull in his corner, had sudden fits as of madness, became weak and uncertain in his motions, trembled and showed signs of nervousness, became weaker and weaker till he could scarcely crawl, and still there was no disturbance in the digestion of his food.

"Another pigeon was taken and fed on food

free from mineral matter by compulsion. It died in thirteen days, and yet an examination of its body showed that it had been well nourished and the organs were sound. The food had apparently been well digested. The absence of mineral matter had not prevented digestion until after several days, but had caused death. The animals had all shown muscular weakness and trembling, and in one case a sort of paralysis, as if the spinal cord and brain had been affected. The nervous system suffered most; indeed it was apparent that the nervous weakness was caused by the absence of mineral salts, and we must from this look on them as necessary to excite and enliven the brain and nerves, and especially promote nutrition and secretion. We know that living a long time on pickled meat, salt pork or corned beef causes a sort of scurvy which is only cured by the use of fresh vegetables and fruit. Now, the brine used to preserve the flesh dissolves a considerable part of the mineral constituents of the meat which the fresh vegetables replace.

"Dr. Forester's investigations gave one

other result. He found that the animals fed by compulsion on food freed from its mineral matter died sooner than those not fed at all. The explanations he gives for this is, that if no food is given the body is nourished on itself, and, consequently, a supply of mineral matter is obtained from the decomposed flesh of the body; but when nourished on food free from salts there is no demand from the body for albumen and carbohydrates, and so no mineral matter is received from its decomposition." —*Dr. M. L. Holbrook.*

CHAPTER XXVI.

WHEAT AND WHEAT PREPARATIONS.

Analyses.	Water.	Mineral.	Nitrogenous (Muscle).	Fiber.	Starch, Fat, etc.
Entire Grain	10.4	1.9	12.5	1.8	73.4
Cracked	10.1	1.6	11.1	1.7	75.5
Farina	10.9	.4	11.0	.4	77.3
Flaked	8.7	2.2	13.4	1.8	73.9
Germs	10.4	1.1	10.5	.9	77.1
Glutens	8.9	1.2	13.6	1.3	75.0
Shredded	8.1	2.1	10.5	1.7	77.6
Maccaroni	10.3	1.3	13.4	..	75.0
Noodles	10.7	1.0	11.7	.4	76.2
Spaghetti	10.6	.6	12.1	.4	76.3
Vermicelli	11.0	4.1	10.9	..	74.0

Wheat is considered one of the most valuable food elements which is now used. It is admitted by hygienists everywhere to contain in almost perfect proportion the exact elements needed to nourish the body under ordinary circumstances. In a previous chapter I have called attention to the deficiency of white flour as a food, but the whole grain, no matter how prepared, is a food that can be highly commended. The outer cover, which is noth-

ing more than waste product, is a valuable stimulant to the bowels, and if the food elements into which wheat enters are always allowed to include this outer covering, the suffering from digestive troubles would materially lessen in a short time. Hot bread made from white flour is about the most indigestible and non-nutritious substance one can possibly eat. It is composed largely of starch, and even those elements which are essential to the nourishment of the body cannot be properly liquefied because of the tendency of this starchy substance to form into a ball and thus resist the influence of the digestive juices. The habit of eating hot biscuit, and other hot breads made from white flour, has unquestionably caused thousands to fill premature graves. They continue such a diet until a diseased condition has been produced, and then proceed to take poisonous drugs to cure the disease. It is really remarkable how so many people succeed in existing so long as they do under the abnormal influences of such an unnatural diet. Food into which white flour enters can be made far

more palatable by substituting a high grade of whole-wheat flour, and under these circumstances it would become a most nourishing food, and if the reader is desirous of building health, the very first steps that should be taken for the accomplishment of this object should be the use of flour made of the whole grain of wheat in all foods in which white flour is needed. The influence of a change of this character will produce upon health and strength will be noticed almost immediately. Not only will the body be more thoroughly nourished, but the work of digestion will be carried on more perfectly, and there will be but little liability of suffering from that common complaint, constipation.

CHAPTER XXVII.

OATS AND OTHER GRAINS.

Analyses.	Water.	Mineral.	Nitrogenous (Muscle).	Fiber.	Starch, Fat, etc.
Barley	10.9	2.4	12.4	2.7	71.6
Buckwheat Flour	13.6	.9	6.4	.4	78.7
Corn	10.9	1.5	10.5	2.1	75.0
Ceraline	10.3	.7	9.6	.4	79.
Hominy	11.8	.3	8.3	.9	78.7
Parched Corn.	5.2	2.6	11.5	..	80.7
Oats, Rolled..	7.8	1.9	16.5	1.0	72.8
Pop Corn....	10.3	.7	9.6	.4	79.0
Rice	12.4	.4	7.4	.2	79.6
Rye	11.6	1.9	10.6	1.7	74.2

Next to wheat, oats are probably the most valuable food of this character. They are very rich in nitrogenous substances, and also contain large quantities of fat which makes them very valuable as a food for producing energy and adding fatty tissue. Though oats are a valuable food on account of their richness, they require a great deal of mastication in order to be properly digested, and the use of this food in the form of oatmeal—which is swallowed with

little or no chewing—cannot be commended; in fact oatmeal, on account of its being eaten in the form of mush, makes a very poor food, and by far the larger quantity of this food passes through the body without being digested.

Rolled oats, or the whole oat grain, with the straw-like covering removed, furnishes a very valuable food if not overcooked and if thoroughly masticated. It requires considerable mastication to thoroughly bring these food elements into a liquid, but when this is done they furnish a food very valuable in nourishment for every part of the body. Persons who are inclined to be thin, if they will use some oat-food product which is appetizing, they will very often find that this one change in their diet will produce an increase in weight.

Corn will also be found a very valuable food. Much of our stock on farms throughout the country receive but little else than this one article and are usually able to thrive and grow fat upon it.

Corn is very valuable as a fattening food,

and is of course a great energy producer. Corn can be eaten in the form of bread and hominy with satisfactory results, and corn cakes are not by any means as objectionable as the white flour product that often adheres to your stomach like glue. Cornmeal mush cannot, however, be recommended. It is of course imperfectly cooked and imperfectly masticated, and under these circumstances the entire work of digestion must be performed by the stomach and intestines. If mush is subjected to the same mastication that is required for crackers and foods of this dry character, it would be digested with ease, but as usually eaten its nourishing qualities are mostly lost.

Though rice is largely used in this country, the amount is comparatively insignificant as compared to that used in China, India, Japan and other Eastern countries. In many parts of China it is almost their sole article of food. This one fact would show that it must furnish very valuable food elements. Though it is slightly deficient in muscle-building elements, it contains large quantities of starch, and

hence is valuable for producing energy and adding fatty tissues to the body. It may be prepared in various ways and is appetizing under almost any circumstances. It should, however, never be cooked until it becomes mushy. It is far more easily digested, and furnishes far more nourishment when cooked only to that point where each grain is separate and distinct. As it contains a large quantity of starch, which is partly digested in the mouth, the necessity for thorough mastication cannot be too strongly emphasized.

Barley, rye and buckwheat are all valuable foods when they are enjoyed by the appetite. Buckwheat cakes can hardly be commended as they are, as a rule, hurriedly swallowed and prepared by a process which causes them to be very difficult to digest. Rye bread, when properly made, is nourishing and can be commended. It is so much superior to white bread as a food that whenever whole wheat bread cannot be secured, it should be used in preference to white bread. Numerous restaurants who do

not keep Graham bread have a supply of rye. Barley is often used in soups and is nourishing, and if thoroughly masticated will be found valuable.

CHAPTER XXVIII.

VEGETABLES.

Analyses.	Water.	Mineral.	Nitrogenous (Muscle).	Fiber.	Starch, Fat, etc
Artichokes	79.5	1.0	2.6	.8	16.1
Asparagus	94.0	.7	1.8	.8	2.7
Beans, butter, fresh	58.9	2.0	9.4	..	29.7
Beans, Lima, fresh	68.5	1.7	7.1	1.7	21.0
Beans, string, fresh	89.2	.8	2.3	1.9	5.8
Beans, dried	12.6	3.5	22.5	4.4	57.0
Beans, frijoles, New Mex.	7.5	4.2	21.9	..	66.4
Beans, Lima, dried	10.4	4.1	18.1	..	67.4
Beets	87.5	1.1	1.6	.9	9.9
Cabbage	91.5	1.0	1.6	1.1	4.8
Carrots	88.2	1.0	1.1	1.1	8.6
Cauliflower	92.3	.7	1.8	1.0	4.2
Celery	94.5	1.0	1.1	..	3.4
Collards	87.1	1.5	4.5	..	6.9
Corn	75.4	.7	3.1	.5	20.3
Cucumbers	95.4	.5	.8	.7	2.6
Eggplant	92.9	.5	1.2	.8	4.6
Greens, dandelion	81.4	4.6	2.4	..	11.6
Greens, turnip salad	86.7	2.2	4.2	..	6.9

Analyses. Water.	Mineral.	Nitrogenous (Muscle).	Fiber.	Starch, Fat, etc.
Kohl-rabi 91.1	1.3	2.0	1.3	4.3
Leeks 91.8	.7	1.2	..	6.3
Lentils 8.4	5.7	25.7	..	60.2
Lettuce 94.7	.9	1.2	.7	2.5
Mushrooms ..88.1	1.2	3.5	.8	6.4
Okra 90.2	.6	1.6	3.4	4.2
Onions, fresh.87.6	.6	1.6	.8	9.4
" green, New Mex..87.1	.6	1.0	..	11.3
Parsnips 83.0	1.4	1.6	2.5	11.5
Peas, dried... 9.5	2.9	24.6	4.5	58.5
" green ..74.6	1.0	7.0	1.7	15.7
" Cowpeas, dried 13.0	3.4	21.4	4.1	58.1
Peas, Cowpeas, green 65.9	1.4	9.4	..	23.3
Potatoes, raw or fresh ...78.3	1.0	2.2	.4	18.1
Potatoes, evaporated 7.1	3.1	8.5	..	81.3
Potatoes, Sweet, raw or fresh ...69.0	1.1	1.8	1.3	26.8
Pumpkins ...93.1	.6	1.0	1.2	4.1
Radishes 91.8	1.0	1.3	.7	5.2
Rhubarb 94.4	.7	.6	1.1	3.2
Rutabagas ...88.9	1.1	1.3	1.2	7.5
Sauerkraut ..88.8	5.2	1.7	..	4.3
Spinach, fresh 92.3	2.1	2.1	.9	2.6
Squash 88.3	.8	1.4	.8	8.7
Tomatoes, fresh 94.3	.5	.9	.6	3.7
Turnips 89.6	.8	1.3	1.3	7.0

No matter what diet one may adopt, a certain amount of green vegetable food can always be used to advantage. Though many of the vegetables are not particularly rich in nourishing elements, still they contain waste matter which is very valuable in its influence over the alimentary canal. Such foods act as a scavenger throughout the entire digestive tract, and many cases of serious illness can be avoided by regular use of different vegetables.

Lettuce is one of the most valuable nerve foods that can be secured. On many occasions when I have been all "unstrung" from hard training or through other straining work, a meal in which lettuce was plentifully supplied, has in a short time entirely disposed of the trouble. It is a most valuable aid wherever one is at all annoyed by insomnia. If the last meal consists of as much lettuce as you may desire to eat, with whole wheat bread and butter, there will be little trouble in wooing the unconsciousness of slumber. The digestibility of lettuce is influenced very greatly by the dressing which you use, and would advise that an equal

quantity of lemon juice and olive oil be used, with salt to taste. This should be stirred with a fork for three or four minutes until thoroughly combined. A dressing of this character will be found to be not only wholesome in itself, but will make the lettuce very appetizing.

Onions are recommended by many as of especial value as a scavenger for the digestive tract, and are unquestionably of value in this way. They can be eaten cooked or raw, though their value as scavenger is much greater if they are eaten raw.

Cabbage is far more wholesome and easily digested when eaten raw than when cooked.

Celery is considered by many to be especially valuable as brain food though there is little in the chemical analysis to support such conclusion. There is no doubt, however, that it is a food of value if relished. It would be well to remember that nearly all vegetables that can be relished when eaten raw, have a tonic influence upon the stomach and other digestive organs. They tend to cleanse and purify.

Potatoes are used now almost everywhere. Their nourishing value lies mostly in their starchy elements. They furnish energy, but are, of course, very deficient in those elements for supplying new tissue for brain and muscles. Wherever potatoes are daily used as a food, meat, beans or some other food element rich in nitrogenous substances should be added.

Sweet potatoes will be found much more rich in fattening elements, and are more relished by many than the ordinary potato.

Tomatoes will be found valuable food although they are usually more appetizing and more easily digested when eaten raw than when cooked. When eaten in this manner, the same dressing previously mentioned for lettuce can be used with them.

Beans, peas and lentils, as will be noted by the analysis, contain a very large percentage of muscle-making elements. They furnish those elements so necessary in properly nourishing the body in almost equal proportion to that furnished by lean meat, and are considered by many to be far superior to animal food for

building strength. There is no question as to their great value in this particular way. If one has hard muscular work to do, or is training for a high degree of muscular development, food of this character is very keenly relished. They seem to supply the necessary elements that is craved by the organs of assimilation under these circumstances. One can perform hard work with food of this character much more satisfactorily than upon a meat diet, though as stated before, in another chapter, while the stimulative character of meat causes it to build, perhaps, more immediate strength than food of this character, it will not by any means furnish the endurance, the ability to continue on and on, to the same extent as does these valuable elements. These foods can be prepared in whatever manner is considered the most appetizing, but they should be eaten very slowly. Because of their richness in the elements required to nourish the body, very naturally they are more difficult of digestion than the ordinary foods, and thorough mastication will aid in making this process of digestion far more easy.

CHAPTER XXIX.

DAIRY PRODUCTS.

Analyses.	Water.	Mineral.	Nitrogenous (Muscle).	Fat.
Butter	11.0	3.0	1.0	85.0
Buttermilk	91.0	.7	3.0	5.3
Cheese, American	31.6	3.4	28.8	36.2
" Cheddar	27.4	4.0	27.7	40.9
" Cheshire	37.1	4.4	26.9	31.6
" Cottage	72.0	1.8	20.9	5.3
" Dutch	35.2	10.0	37.1	17.7
" Fromage de Brie	60.2	1.5	15.9	22.4
" Full Cream	34.2	3.8	25.9	36.1
" Limburger	42.1	5.1	23.0	29.8
" Neuchatel	50.0	2.4	18.7	28.9
" Pineapple	23.0	5.6	29.9	41.5
" Skimmed Milk	45.7	4.2	31.5	18.6
" Swiss	31.4	4.8	27.6	36.2
Koumiss	89.3	.4	2.8	7.5
Milk, Condensed, Sweetened	26.9	1.9	8.8	62.4
Milk, Unsweetened	68.2	1.7	9.6	20.5
" Skimmed	90.5	.7	3.4	5.4
" Whole	87.0	.7	3.3	9.0
Whey	93.0	.7	1.0	5.3

Milk and products derived from it furnish a large part of the food used in the civilized

world. As a rule it is a most satisfactory food though when one is inclined to be of a bilious temperament it cannot be commended. In fact, if one uses milk or foods produced from it too freely, it will very often cause a bilious condition. This result can, however, be obviated if milk is boiled before drinking, or if sipped or eaten very slowly. Though the boiling of milk usually makes it more difficult of digestion, it usually becomes a more wholesome drink under this influence, as the microbes, should there be any present, are naturally destroyed by the extreme heat.

If careful attention is given to the necessity for masticating milk, just as you would solid foods, that is by using it with some food that requires a certain amount of mastication, or actually retaining it in the mouth a sufficient length of time to slightly mix it with saliva, but little difficulty will be found in properly digesting and assimilating it. Milk should never under any circumstances be swallowed just as you would water. Of course if the stomach is in a thoroughly normal condition it

will always be digested satisfactorily, but if there is the slightest inclination to disease or weakness of any kind, there may be difficulty.

Buttermilk is a superior summer drink as the acid which it contains is quite similar in its influence to the acid found in fruits. Cream, as will be noticed, is very rich in fats, and if one is inclined to be thin, and will strengthen his digestive organs so they can digest such a rich food, he can easily gain considerable weight by its use. It is, however, mere folly to attempt to digest this without preparation as it will simply create disturbances if the digestive organs are unable to assimilate foods of this character.

Cheese is a very valuable food and is very rich in nourishment for the muscles, brain, and vital functions of the body. On account of its richness it is naturally very difficult to digest, though the assimilating organs are usually prepared to digest it if an actual need exists for the elements it contains and if properly masticated it will usually be digested without disturbances of any character. Of course

those brands of cheese, the flavor of which has been produced by age, can hardly be commended. Cheese to be perfectly wholesome and easily digested, should be as fresh as possible.

Butter is a milk product which is used everywhere, and is, of course, a valuable energy-producing food. It is usually added to white bread, a food which already has an over-supply of starch and other fattening elements, and under these circumstances it certainly cannot be commended. Where the system is in need of nourishment of this character, however, and it is eaten in a manner which makes it palatable, there is no objection to it.

Condensed milk is another product which is used a great deal, and if properly prepared there should be no great objection to it, though, of course, it is in no way equal to the fresh product, and should never be used if fresh milk can be secured. Much of its nourishing elements is naturally destroyed in the condensing process,

CHAPTER XXX.

FRUITS, BERRIES, ETC.

Analyses.	Water.	Mineral.	Nitrogenous (Muscle).	Fiber.	Starch, Fat, etc.
Apples	84.6	.3	.4	1.2	13.5
Apricots	85.0	.5	1.1	..	13.4
Bananas	75.3	.8	1.3	1.0	21.6
Blackberries	86.3	.5	1.3	2.5	9.4
Cherries	80.9	.6	1.0	.2	17.3
Currants	85.0	.7	1.5	..	12.8
Cranberries	88.9	.2	.4	1.5	9.0
Figs, fresh	79.1	.6	1.5	..	18.8
Grapes	77.4	.5	1.3	4.3	16.5
Huckleberries	81.9	.3	.6	..	17.2
Lemons	89.3	.5	1.0	1.1	8.1
Muskmelons	89.5	.6	.6	2.1	7.2
Nectarines	82.9	.6	.6	..	15.9
Oranges	86.9	.5	.8	..	11.8
Pears	84.4	.4	.6	2.7	11.9
Persimmons	66.1	.9	.8	1.8	30.4
Pineapple	89.3	.3	.4	.4	9.6
Plums	78.4	.5	1.0	..	20.1
Pomegranates	76.8	.6	1.5	2.7	18.4
Prunes	79.6	.6	.9	..	18.9
Raspberries, red	85.8	.6	1.0	2.9	9.7
Raspberries, black	84.1	.6	1.7	..	13.6
Strawberries	90.4	.6	1.0	1.4	6.6
Watermelons	92.4	.3	.4	..	6.9
Whortleberries	82.4	.4	.7	3.2	13.3

Fruits of all kinds form not only a delicious addition to our diet, but are valuable in many ways. They are naturally deficient in actual nourishment, but the water which they contain is absolutely pure and is easily assimilated and used to advantage by the system. Most fruits also have acid properties which are valuable in assisting the digestive process. This is especially true when there is any inclination to a liver trouble or biliousness of any kind. Many serious illnesses can be avoided by the judicious use of fruits, and unquestionably they are valuable in the cure of various diseases.

The "grape cure" has become famous throughout the world, as diseases of all kinds have been cured radically and thoroughly by the simple use of grapes as an exclusive diet for a considerable length of time. Grapes are very rich in starch and sugar, as will be noted, and really a valuable food and remarkably easy of digestion. When the stomach is so weak as to be unable to digest the simplest food elements, grapes will in nearly every case be found to digest without the slightest irritation. Of course

in eating grapes the most satisfactory method is to pick and eat them from the vines. This is, of course, difficult for most of my readers, but if care is taken to secure them well ripened, their effects when eaten at home are nearly equal to that secured when picking them from the vine.

The apple is probably the most used of all fruits, and their flavor varies very greatly. Some have a very sweet flavor and contain little acid. Others are well supplied with this acid element which is a very valuable tonic to many stomachs. Apples are usually better eaten raw, and are more easily digested in this condition, provided they are thoroughly masticated. Of course there are some very delicate stomachs which find difficulty in digesting raw apples, but where such condition has been produced it is usually ample evidence that nourishment of this character is not needed by the system, or else it is evidence that the digestive organs need to be rested by frequent short fasts or a long fast.

The unfermented juice of the apple makes a

very valuable drink and can be most highly recommended. A bilious condition together with numerous other ailments, will in many instances entirely disappear if one will drink all the cider that may be desired. I remember quite well an experience in my own life where cider proved a very valuable aid in recovering normal weight after a dietetic experiment which had weakened my digestive organs and greatly depreciated my general strength.

I had been following out an experiment for two or three months, and though my knowledge at that time of diet was rather limited, I fully believed that my conclusions were correct, and I adhered to my determination to prove this with too much zeal. One evening I felt very weak and concluded to test my pulse beat and was amazed to find that it had decreased to thirty-five to the minute. It seemed to me impossible that it could be so low, and I tested it several times before being convinced. On the realization of my condition, which was emphasized not only by the low pulse beat but by its faintness, I concluded to immediately begin

a normal diet. In my condition at that time this was not easily done as my digestion was so weakened that it could hardly digest anything of importance, and for several days I found that my strength and weight had increased but little, although the pulse beat had largely improved. On one occasion, I attempted to eat a hearty meal and found that only a few morsels could be eaten, and a few moments later, on eating some apples rich in acids, I noticed their immediate beneficial effect. I concluded that if some apple cider could be had it would probably help me greatly in the work of digesting. Some especially pure apple juice was immediately procured and almost from that date I began to gain weight at the rate of almost a pound per day, and six weeks after that time I had gained thirty pounds. The gain was not caused by the medicinal influence of cider. The fact was simply that I needed the acids in the fruit juice to assist the digestive process. This personal experience will no doubt emphasize the importance of the use of apples; and whenever convenient and appetizing, they

should always be made a part of your diet. They are very valuable as a remedy for constipation, and in fact nearly all fruits are valuable in this respect, though blackberries have been considered otherwise by numerous hygienic authorities.

In selection of satisfactory fruits you should let your taste largely guide you. The tendency in the use of fruits is usually to swallow them rather hurriedly as they are easily masticated. This tendency should be resisted, and mastication continued in every case until the food is actually reduced to liquid and swallowing is involuntary.

CHAPTER XXXI.

MEATS.

Analyses.	Water.	Mineral.	Nitrogenous (Muscle).	Fat.
Chicken	74.8	1.1	21.6	2.5
Eggs	73.7	1.0	14.8	10.5
Frogs' Legs	83.7	1.0	15.1	.2
Goose, Young	46.7	.8	16.3	36.2
Loin of Beef, Lean	67.0	1.0	19.3	12.7
" " " Fat	54.7	.9	16.8	27.6
Lamb, Lean	72.3	1.4	23.6	2.7
" Fat	54.6	.9	17.1	27.4
Mutton, Lean	67.4	1.1	19.1	12.4
" Fat	55.0	0.9	17.0	27.1
Pork, Lean	60.0	1.3	24.3	14.4
" Fat	13.8	.2	4.1	81.9
Turkey	55.5	1.0	20.6	22.9
Veal, Lean	72.1	1.1	21.2	5.6
" Medium, Fat	66.0	1.0	19.0	14.0

There is unquestionably much to be learned as to the proper diet of man. Experiments heretofore have been made simply by a few individuals here and there. No really concerted efforts of importance have been made to determine the value of different food elements.

Though I am inclined to favor a vegetable diet, as stated before, it would be difficult for the average individual at the present time to entirely avoid meat, unless he was prepared to secure a variety of grains, fruits and nuts to furnish nourishment necessary for the highest degree of physical health.

Beef is generally considered to be the most wholesome meat, though chicken and fowl of all kinds can be commended. In the preparation of beef, broiling or roasting is usually found superior to boiling or frying. When meat is boiled a large amount of the nourishment is very often extracted in the boiling process; and when fried, the lard or butter unquestionably makes it much more difficult to digest.

Pork of any kind can hardly be commended. It is a meat that is usually difficult to digest, and often contains microbes that are seriously inimicable to health.

Some maintain that ham and bacon, in passing through the preservative process, become more wholesome as food because the microbes

have been destroyed in this process. Though there may be some truth in the claim, any process that tends to preserve meat or food of any character from fermentation seriously lessens its value as a food. Not only is it more difficult to digest, but those elements that can be digested and used by the system, are very greatly lessened. Under these circumstances it would be advisable to entirely avoid pork of any kind whenever any other elements which will nourish the body can be secured.

Rabbits and squirrels, and meat foods of this character—game—are usually more wholesome than beef for the reason that these animals are running wild and are in every case in perfect condition.

Kidneys, hearts and other internal organs are not usually considered entirely wholesome and should be avoided.

Veal and all other immature meats cannot be commended.

Of all animal foods eggs are probably the best. They seem to furnish all the necessary

nourishment, being rich in the elements that feed the body, and if fresh are not so inclined towards the production of impurities as meat.

CHAPTER XXXII.

NUTS.

Analyses	Water.	Mineral.	Nitrogenous (Muscle).	Fiber.	Fat.	Starch, etc.
Almonds	4.8	2.0	21.0	2.0	54.9	15.3
Beechnuts	4.0	3.5	21.9	..	57.4	13.2
"Biotes" (acorns)	4.1	2.4	8.1	..	37.4	48.0
Brazil Nuts.....	5.3	3.9	17.0	..	66.8	7.0
Butternuts	4.4	2.9	27.9	..	61.2	3.5
Chestnuts, fresh	45.0	1.3	6.2	1.8	5.4	40.3
Chestnuts, dried	5.9	2.2	10.7	2.7	7.0	71.5
Cocoanuts	14.1	1.7	5.7	..	50.6	27.9
Cocoanut, prepared	3.5	1.3	6.3	..	57.4	31.5
Filberts	3.7	2.4	15.6	..	65.3	13.0
Hickory Nuts...	3.7	2.1	15.4	..	67.4	11.4
Lichi Nuts.....	17.9	1.5	2.9	..	.2	77.5
Peanuts	9.2	2.0	25.8	2.5	38.6	21.9
Pecans, polished.	3.0	1.5	11.0	..	71.2	13.3
" unpolished	2.7	1.9	9.6	..	70.5	15.3
PINE NUTS:—						
Pignolias	6.4	3.4	33.9	..	49.4	6.9
Piniones	3.8	2.8	6.5	..	60.7	26.2
Piñon	3.4	2.8	14.6	..	61.9	17.3
Pinus Sabiniana.	5.1	4.7	28.1	..	53.7	8.4
PISTACHIOS:—						
First Quality....	4.2	3.2	22.3	..	54.0	16.3
Second " ...	4.3	3.0	22.8	..	54.9	14.9

Analyses.	Water.	Mineral.	Nitrogenous (Muscle).	Fiber.	Fat,	Starch, etc.
Walnuts, California	2.5	1.7	18.4	1.4	64.4	11.6
Walnuts, California, black..	2.5	1.9	27.6	1.7	56.3	10.0
Walnuts, California, soft shell	2.5	1.4	16.6	2.6	63.4	13.5
Malted Nuts ...	2.6	2.2	23.7	..	27.6	43.9

About the richest food that can be found in all the products used by man is unquestionably nut meats. It is a general impression that these foods are very difficult to digest, and in fact the average individual will warn you against their use for the reason that they are almost sure to cause indigestion. When they are eaten as is usual this result occurs in many instances. Most any other food element, if eaten in the same way, would produce similar results. The general opinion is that nuts are a delicacy which should not be indulged during a meal, but at odd times whenever the appetite may desire them. As stated in a previous chapter, this habit of "piecing" between meals is productive of evil results in every case, and it applies with

equal if not more force to rich food like that furnished by nut meats.

Nuts should be eaten during the meal just the same as any other food, and the necessity for thorough mastication cannot be too strongly emphasized. Every mouthful should be chewed until it is an actual liquid, and if this is followed in every case, and the nuts are eaten as a part of your meal and at the time you are usually in the habit of eating, there will be little or no difficulty in digesting them.

The enormous activity manifested by those animals that live almost exclusively on nuts is ample evidence of their nourishing qualities. For instance, take a squirrel which has been able to secure an ample store of nuts, you will find him usually fat and sleek and capable of activity which hardly a single animal can equal. He will jump from tree to tree when the distance is as great or greater than the longest leap ever made by man. If they are being pursued it is not at all infrequent for them to jump from the top of a high tree to the ground, light on their feet, and run away, apparently not in the

least affected by leaping from such a great height.

I am personally acquainted with a man who subsisted for many months exclusively on a nut and fruit diet, and he maintained that it was satisfactory in every respect. He stated that his usual habit was to eat twice a day, and the first part of his meal was usually a half-pound of shelled pecans or walnuts, after which he would eat whatever fruit he might desire. He stated that though when beginning this diet he was suffering from a complication of complaints, that it was continued but a short time before all these weaknesses disappeared absolutely.

The analyses furnished herewith indicate percentage of the various elements which these nuts contain. In all analysis previous to this I have combined the starch and fats as they are practically for similar purposes, though all hygienists claim that fat is more easily assimilated than starch or sugar. Nuts contain such a large quantity of pure fat or oil, whichever it may be termed, that I have separated it from

the starch that my readers may see how rich nuts are in this particular element. The average reader will no doubt be surprised upon perusing this list, to note the large quantity of muscle-making elements furnished by peanuts. They are also very rich in fats and consequently are a very valuable food to nourish the body under conditions of hard mental or physical work.

Of course in selecting nuts for your own particular use it is well for you to consult your appetite entirely, though if you are aware of the different elements of these different nuts, and also realizing your particular needs, this will unquestionably to a certain extent influence your appetite.

CHAPTER XXXIII.

FISH.

Analyses.	Water.	Mineral.	Nitrogenous (Muscle).	Fat.
Alewife	74.4	1.5	19.2	4.9
Bass	76.7	1.2	20.4	1.7
Black Fish	79.1	1.1	18.5	1.3
Bluefish	78.5	1.3	19.0	1.2
Buffalo Fish	78.6	1.2	17.9	2.3
Butter Fish	70.0	1.2	17.8	11.0
Cat Fish	64.1	.9	14.4	20.6
Ciscoe	74.0	1.1	18.1	6.8
Cod	82.6	1.2	15.8	.4
Cusk	82.0	.9	16.9	.2
Eels	71.6	1.0	18.3	9.1
Flounders	84.2	1.3	13.9	.6
Haddock	81.7	1.2	16.8	.3
Hake	83.1	1.0	15.2	.7
Halibut	75.4	1.0	18.4	5.2
Herring	72.5	1.5	18.9	7.1
Kingfish	79.2	1.2	18.7	.9
Lamphreys	71.1	.7	14.9	13.3
Mackeral	73.4	1.2	18.3	7.1
Mullet	74.9	1.2	19.3	4.6
Muskellunge	76.3	1.6	19.6	2.5
Perch	75.7	1.2	19.1	4.0
Pickerel	79.8	1.1	18.6	.5
Pike	80.8	1.1	17.3	.8
Pollock	76.0	1.5	21.7	.8
Pomparo	72.8	1.0	18.7	7.5

Analyses.	Water.	Mineral.	Nitrogenous (Muscle).	Fat.
Porgy	75.0	1.4	18.5	5.1
Red Grouper	79.5	1.1	18.8	.6
Red Snapper	78.5	1.3	19.2	1.0
Salmon	64.6	1.4	21.2	12.8
Shad	70.6	1.3	18.6	9.5
Sheepshead	75.6	1.2	19.5	3.7
Skate	82.2	.1.1	15.3	1.4
Smelt	79.2	1.7	17.3	1.8
Spanish Mackerel	68.1	1.5	21.0	9.4
Sturgeon	78.7	1.4	18.0	1.9
Tomcod	81.5	1.0	17.1	.4
Trout	77.8	1.2	18.9	2.1
Turbot	71.4	1.3	12.9	14.4
Weakfish	79.0	1.2	17.4	2.4
Whitefish	69.8	1.6	22.1	6.5
SHELL FISH:—				
Clams	85.8	2.6	8.6	3.0
Crabs	77.1	3.1	16.6	3.2
Crayfish	81.2	1.3	16.0	1.5
Lobster	79.2	2.2	16.4	2.2
Mussels	84.2	1.9	8.7	5.2
Oysters	86.9	2.0	6.2	4.9
Scallops	80.3	1.4	14.8	3.5
Terrapin	74.5	1.0	21.0	3.5
Turtle	79.8	1.2	18.5	.5

Fish is generally considered to be a very valuable food for the brain. This is an error. It is far less valuable as a brain food than numerous others. In fact it would be well to remember that what is food for the brain is also food

for the muscles; the same elements which form the cells in the muscles also form the cells in the brain. The same food elements which furnish the power for muscular effort also furnish the power for brain work, therefore any food which is rich in the nitrogenous and fattening elements would naturally be advantageous as brain food.

Oysters are probably eaten more than any other sea food, and an impression has somehow been gained that they are very valuable in nourishing the muscular and nervous system. You will note in the table that their nourishing elements of this character are less than any other fish.

Fish is a food which can be recommended very often when meat does not seem to produce satisfactory results. Fish, if fresh, seems to be more easily digested and less liable to produce impurities. This of course does not apply to all cases, but it is not by any means so hearty a food as beef and its nourishing qualities, in many instances, are nearly equal.

MISCELLANEOUS FOOD PRODUCTS.

Analyses.	Water.	Mineral.	Nitrogenous (Muscle).	Fat.
Gelatin	13.6	2.1	84.2	.1
Cottolene	..	..	..	100.0
Oleomargarine	9.5	6.3	1.2	83.0
Candy	..	..	..	96.0
Honey	18.2	.2	.4	81.2
Molasses Cane	25.1	3.2	2.4	69.3
EGGS:—				
Uncooked	73.7	1.0	14.8	10.5
Boiled, Whole	73.2	.8	14.0	12.0
" Whites	86.2	.6	13.0	.2
" Yolks	49.5	1.1	16.1	33.3

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